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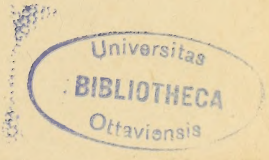

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OF THE

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1. Report, Returns and Statistics of the Inland Revenues of the Dominion of Canada, for the fiscal year ended 30th June, 1889. Presented to the House of Commons, 17th January, 1890, by Hon. J. Costigan..... *Printed for both Distribution and Sessional Papers.*

1*a*. Inspection of Weights, Measures and Gas, being a Supplement to the Report of the Department of Inland Revenue, 1889..... *Printed for both Distribution and Sessional Papers.*

1*b*. Report on Adulteration of Food, being a Supplement to the Report of the Department of Inland Revenue, 1889..... *Printed for both Distribution and Sessional Papers.*

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2. Tables of the Trade and Navigation of the Dominion of Canada, for the fiscal year ended 30th June, 1889. Presented to the House of Commons, 17th January, 1890, by Hon. M. Bowell—
Printed for both Distribution and Sessional Papers.

CONTENTS OF VOLUME No. 3.

3. Public Accounts of Canada, for the fiscal year ended 30th June, 1889; presented to the House of Commons, 17th January, 1890, by Hon. G. E. Foster. Estimates for the fiscal year ending 30th June, 1891; presented 30th January, 1890. Supplementary Estimates of Canada, for the fiscal year ending 30th June, 1890; presented 27th March, 1890. Further Supplementary Estimates for the fiscal year ending 30th June, 1890; presented 25th April, 1890. Supplementary Estimates for the year ending 30th June, 1891; presented 6th May, 1890—
Printed for both Distribution and Sessional Papers.

4. List of Shareholders in the Chartered Banks of the Dominion of Canada, as on the 31st December, 1889. Presented to the House of Commons, 9th April, 1890, by Hon. G. E. Foster—
Printed for both Distribution and Sessional Papers.

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5. Report of the Auditor General on Appropriation Accounts, for the year ended 30th June, 1889. Presented to the House of Commons, 27th January, 1890, by the Hon. G. E. Foster—
Printed for both Distribution and Sessional Papers.

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6. Report of the Minister of Agriculture for the Dominion of Canada, for the calendar year, 1889. Presented to the House of Commons, 20th March, 1890, by Hon. J. Carling—
Printed for both Distribution and Sessional Papers.

6*. Canadian Immigration and Emigration. Annex to the Report of the Minister of Agriculture—
Printed for both Distribution and Sessional Papers.

6*a*. Criminal Statistics for the year 1888..... *Printed for both Distribution and Sessional Papers.*

6*a**. Criminal Statistics for the year 1889..... *Printed for both Distribution and Sessional Papers.*

CONTENTS OF VOLUME No. 6.

6*b*. Report on Canadian Archives, 1890. Presented to the House of Commons, 10th February, 1890, by Hon. J. Carling.....*Printed for both Distribution and Sessional Papers.*

6*c*. Reports of the Director and Officers of the Experimental Farms, for the year 1889. Presented to the House of Commons, 9th April, 1890, by Hon. J. Carling—
Printed for both Distribution and Sessional Papers.

6*d*. Report of the High Commissioner for Canada, with Reports from Agents in the United Kingdom, for the year 1889. Presented to the House of Commons, 9th April, 1890, by Hon. J. Carling—
Printed for both Distribution and Sessional Papers.

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7. Report of the Secretary of State of Canada, for the year ended 31st December, 1889. Presented to the House of Commons, 29th January, 1890, by Hon. J. A. Chapleau—
Printed for both Distribution and Sessional Papers.

7*a*. The Civil Service List of Canada, 1889. Presented to the House of Commons, 3rd February, 1890, by Hon. J. A. Chapleau..... *Printed for both Distribution and Sessional Papers.*

7*b*. Report of the Board of Examiners for the Civil Service of Canada, for the year ended 31st December, 1889. Presented to the House of Commons, 30th January, 1890, by Hon. J. A. Chapleau—
Printed for both Distribution and Sessional Papers.

7*c*. Report of the Department of Public Printing and Stationery for the Dominion of Canada, for the year ended 30th June, 1889.....*Printed for both Distribution and Sessional Papers.*

8. Report of the Joint Librarians of Parliament on the state of the Library of Parliament. Presented to the House of Commons, 16th January, 1890, by Hon. Mr. Speaker—
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9. Report of the Superintendent of Insurance, for the year ended 31st December, 1889—
Printed for both Distribution and Sessional Papers.

9*a*. Preliminary Abstract of the business of Canadian Life Insurance Companies, for the year ended 31st December, 1889. Presented to the House of Commons, 7th February, 1890, by Hon. G. E. Foster.
Printed for both Distribution and Sessional Papers.

9*b*. Abstract of Statements of Insurance Companies in Canada for the year ending 31st December, 1889. Presented to the House of Commons, 9th April, 1890, by Hon. G. E. Foster—
Printed for both Distribution and Sessional Papers.

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10. Report of the Minister of Justice as to Penitentiaries in Canada, for the year ended 30th June, 1889. Presented to the House of Commons, 28th March, 1890, by Sir John Thompson—
Printed for both Distribution and Sessional Papers.

11. Annual Report of the Department of Militia and Defence of the Dominion of Canada, for the year ended 31st December, 1889. Presented to the House of Commons, 6th February, 1890, by Sir Adolphe Caron..... .....*Printed for both Distribution and Sessional Papers.*

CONTENTS OF VOLUME No. 10.

12. Annual Report of the Department of Indian Affairs, for the year ended 31st December, 1889. Presented to the House of Commons, 22nd January, 1890, by Hon. E. Dewdney—
Printed for both Distribution and Sessional Papers.

13. Report of the Commissioner of the North-West Mounted Police Force, 1889. Presented to the House of Commons, 17th March, 1890, by Sir John Macdonald—
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14. Annual Report of the Department of the Interior, for the year 1889. Presented to the House of Commons, 31st March, 1890, by Hon. E. Dewdney—
Printed for both Distribution and Sessional Papers.

15. Report of the Postmaster General, for the year ended 30th June, 1889. Presented to the House of Commons, 23rd January, 1890, by Hon. J. Haggart—
Printed for both Distribution and Sessional Papers.

OMISSION.

The two following documents were not printed until the Index was issued, which accounts for their omission :

6*e.* Abstracts of the Returns of Mortuary Statistics for the year 1889. *(Printed for both Distribution and Sessional Papers.)*

[The above paper has been inserted as the first of Volume No. 7, immediately preceding the Report of the Secretary of State.]

19*b.* Canal Statistics for Season of Navigation, 1889. *(Printed for both Distribution and Sessional Papers.)*

[Inserted as last paper in Volume No. 13, immediately following Railway Statistics.]

CONTENTS OF VOLUME No. 12.

16. Twenty-second Annual Report of the Department of Marine, for the fiscal year ended 30th June, 1889. Presented to the House of Commons, 24th February, 1890, by Hon. Mr. Colby—
Printed for both Distribution and Sessional Papers.

16*a*. Report of the Chairman of the Board of Steamboat Inspection, for calendar year ended 31st December, 1889 ..... *Printed for both Distribution and Sessional Papers.*

17. Annual Report of the Department of Fisheries, for the year 1889. Presented to the House of Commons, 16th April, 1890, by Hon. Mr. Colby.... *Printed for both Distribution and Sessional Papers.*

17*a*. Special Report of the delegates appointed in 1889, to enquire into the Herring Fishing Industry of Great Britain and Holland. Presented to the House of Commons, 10th February, 1890, by Hon. C. H. Tupper ..... *Printed for both Distribution and Sessional Papers.*

17*b*. Report on the Fisheries Protection Service of Canada, 1889. Presented to the House of Commons, 10th March, by Hon. Mr. Colby ..... *Printed for both Distribution and Sessional Papers.*

CONTENTS OF VOLUME No. 13.

18. Annual Report of the Minister of Public Works, for the fiscal year 1888-89, on the works under his control. Presented to the House of Commons, 3rd February, 1890, by Sir Hector Langevin—
Printed for both Distribution and Sessional Papers.

19. Annual Report of the Minister of Railways and Canals for the past fiscal year, from the 1st July, 1888, to 30th June, 1889, on the works under his control. Presented to the House of Commons, 3rd March, 1890, by Sir John A. Macdonald.... *Printed for both Distribution and Sessional Papers.*

19*a*. Railway Statistics of Canada, and Capital, Traffic and Working Expenditure of the Railways of the Dominion, 1889. Presented to the House of Commons, 9th May, 1890, by Sir John A. Macdonald—
Printed for both Distribution and Sessional Papers.

CONTENTS OF VOLUME No. 14.

20. Report of the Social Economy Section of the Universal International Exhibition of 1889 at Paris, prepared by Jules Helbronner, member of the Royal Labor Commission. Presented to the House of Commons, 8th May, 1890, by Hon. M. Bowell.. *Printed for both Distribution and Sessional Papers.*

21. Return to an order of the House of Commons, dated 20th March, 1889, for copies of all correspondence respecting the establishment of a bi-weekly, in place of a weekly, postal service between Lourdes and Somerset, in the county of Megantic. Presented to the House of Commons, 20th January, 1890.—*Mr. Turcot*..... *Not printed.*

21*a*. Return to an order of the House of Commons, dated 25th February, 1889, for copies of all correspondence respecting the awarding of the contract for carrying the mail between Becancour Station and Ste. Julie de Somerset, and between Inverness and Ste. Julie de Somerset, awarded in or about the month of April, 1888 ; also of all tenders connected therewith. Presented to the House of Commons, 20th January, 1890.—*Mr. Turcot*..... *Not printed.*

21*b*. Return to an order of the House of Commons, dated 2nd March, 1888, for a return of all correspondence by letter or telegram, and all other papers, relative to the conveyance of extra provincial mails in Prince Edward Island since the 1st of September last. Presented to the House of Commons, 20th January, 1890.—*Mr. Davies*..... *Not printed.*

21*c*. Return to an order of the House of Commons, dated 23rd January, 1890, for a return showing the number of registered letters sent to the Dead Letter Office during the years 1887, 1888 and 1889, up to the 31st December last. Presented to the House of Commons, 29th January, 1890.—*Mr. McMullen*..... *Not printed.*

21*d*. Return to an order of the House of Commons, dated 3rd February, 1890, for copies of all letters, reports and other correspondence now in the possession of the Postmaster General respecting the carriage of the mails between Campbellton, in the province of New Brunswick, and Gaspé Basin, in the province of Quebec. Presented to the House of Commons, 7th February, 1890.—*Mr. Joncas*..... *Not printed.*

22. Statement of Governor General's Warrants issued and expenditure made under same since last session of Parliament, in accordance with Consolidated Revenue and Audit Act, section 32, sub-section 2. Presented to the House of Commons, 20th January, 1890, by Hon. G. E. Foster—
Printed for Distribution only.

23. Report of the Commissioner, Dominion Police, for the year 1889, under Revised Statutes of Canada, chapter 184, section 5. Presented to the House of Commons, 21st January, 1890, by Sir John Thompson ..... *Not printed.*

24. Statement of expenditure on account of Miscellaneous Expenses from 12th July, 1889, to 4th January, 1890, authorized by Act 52 Victoria, chapter 1. Presented to the House of Commons, 22nd January, 1890, by Hon. G. E. Foster.....*Not printed.*

25. Return to an order of the House of Commons, dated 8th February, 1889, for a return of the number of lobster factories round the coast of Prince Edward Island, the number of fines imposed during the season of 1888, the amount of each fine, the names of parties who have paid the fines, and the names of parties who have not paid the same; also the nature of offence in each case. Presented to the House of Commons, 22nd January, 1890.—*Mr. Perry*.....*Not printed.*

26. Copies of the regulations affecting Dominion Lands which have been sanctioned by the Privy Council since the close of last session of Parliament, in compliance with section 91 of the Dominion Lands Act, chapter 54 of the Revised Statutes of Canada. Presented to the House of Commons, 28th January, 1890, by Hon. J. A. Chapleau.....*Not printed.*

27. Regulations for the control and management of the Rocky Mountains Park of Canada, sanctioned by Order in Council of the 27th November, 1889. Presented to the House of Commons, 28th January, 1890, by Hon. J. A. Chapleau.....*Printed for Distribution only.*

CONTENTS OF VOLUME No. 15.

28. Statement of all superannuations and retiring allowances in the Civil Service, giving the name and rank of each person superannuated or retired, his salary, age and length of service, his allowance and cause of retirement, whether vacancy has been filled by promotion or new appointment, etc., for year ended 31st December, 1889. Presented to the House of Commons, 29th January, 1890, by Hon. G. E. Foster.....*Printed for Sessional Papers only.*

28*a*. Return to an address of the House of Commons, to His Excellency the Governor General, dated the 22nd January, 1890, for copies of all Orders in Council, correspondence and documents respecting the superannuation of certain employees in the Cullers' Office at Quebec. Presented to the House of Commons, 30th January, 1890.—*Mr. Langelier (Quebec Centre)*.....*Not printed.*

28*b*. Return to an address of the House of Commons, to His Excellency the Governor General, dated 22nd January, 1890, for copies of all Orders in Council, correspondence and documents respecting the superannuation of certain employés in the Post Office at Quebec, and in the Post Office Inspector's Office at Quebec; and the filling up of the vacancies caused by their superannuation. Presented to the House of Commons, 5th March, 1890.—*Mr. Langelier (Quebec Centre)*.....*Not printed.*

29. Return to an order of the House of Commons, dated 23rd January, 1890, for a return giving a detailed statement of receipts and expenditures to 1st January, 1890, together with statement of the same for the half year ending 1st January, 1889. Presented to the House of Commons, 29th January, 1890.—*Sir Richard Cartwright*.....*Printed for Distribution only.*

30. Return to an order of the House of Commons, dated 20th January, 1890, for a return showing the amounts of money deposited in the several savings banks in the Dominion, and in the several post office savings banks, the location of each, and the gross amount of deposits in each on the 30th of June and December last. Presented to the House of Commons, 29th January, 1890.—*Mr. McMullen*.....*Not printed.*

30*a*. Supplementary return to an order of the House of Commons, dated 20th January, 1890, for a return showing the amounts of money deposited in the several savings banks in the Dominion, and in the several post office savings banks, the location of each, and the gross amounts of deposits in each on the 30th of June and December last. Presented to the House of Commons, 18th February, 1890.—*Mr. McMullen*.....*Not printed.*

30*b*. Return to an order of the House of Commons, dated 5th February, 1890, for copies of the original charters of the Bank of British North America and of the Bank of British Columbia, and of all amendments thereto. Presented to the House of Commons, 21st February, 1890.—*Mr. Edgar*—*Not printed.*

30*c*. Return to an order of the House of Commons, dated 23rd January, 1890, for a return giving the names of all the chartered banks in Canada that have suspended payment, gone into liquidation, or become insolvent since Confederation, showing the amount of capital stock authorized, the amount of stock subscribed, the amount of stock paid up, the assets and liabilities of said banks at the time of such suspension or failure, the nature of such assets and liabilities, the dates of said charters and the dates of forfeiture or relinquishment of such charters, and dividend paid to bill holders and depositors. Presented to the House of Commons, 2nd April, 1890.—*Mr. Hesson*.....*Not printed.*

31. Correspondence with the Canadian Pacific Railway Company covering a copy of list of all lands sold by that company during the year ending 1st day of October last, in compliance with section 8 of 49 Victoria, chapter 9. Presented to the House of Commons, 30th January, 1890, by Hon. E. Dewdney.....*Not printed.*

31*a*. Return (*in part*) under resolution of the House of Commons, passed on the 20th February, 1882, on all subjects affecting the Canadian Pacific Railway, respecting details as to: 1. Selection of the route. 2. The progress of the work. 3. The selection or reservation of land. 4. The payment of moneys. 5. The laying out of branches. 6. The progress thereon. 7. The rates of tolls for passengers and freight. 8. The particulars required by the Consolidated Railway Act and amendments thereto, up to the end of the previous fiscal year. 9. Like particulars up to the latest practicable date before the presentation of the return. 10. Copies of all Orders in Council and all correspondence between the Government and the railway company, or any member or officer of either, relating to the affairs of the company. Presented to the House of Commons, 30th January, 1890, by Hon. E. Dewdney.....*Printed for Sessional Papers only.*

31*b*. Return to an address of the House of Commons to His Excellency the Governor General, dated 24th January, 1890, for copies of all correspondence between the Dominion Government and the Imperial Government, and between the Dominion Government and the Canadian Pacific Railway Company in regard to the granting of a subsidy to the latter company for lines of steamships to run between Vancouver, B.C., and Japan and Australia. Presented to the House of Commons, 25th February, 1890.—*Mr. Prior*.....*Not printed.*

31*c*. Return to an order of the House of Commons, dated 29th January, 1890, for copies of all petitions, letters or other documents addressed to the Government, and complaining of the condition of the bridges on the branch lines of railway worked by the Canadian Pacific Railway Company within the county of Bagot and the neighboring counties. Presented to the House of Commons, 26th February, 1890.—*Mr. Dupont*.....*Not printed.*

32. Detailed statement of all bonds or securities registered in the Department of the Secretary of State of Canada, submitted to the Parliament of Canada under section 23, chapter 19, of the Revised Statutes of Canada. Presented to the House of Commons, 3rd February, 1890, by Hon. J. A. Chapleau.....*Not printed.*

33. Return to an address of the House of Commons, to His Excellency the Governor General, dated 27th January, 1890, for copies of all resolutions of the Legislative Assembly of the North-West Territories, respecting the application of moneys voted by this House for the use of the said territories. Presented to the House of Commons, 10th February, 1890.—*Hon. Mr. Laurier*.....*Not printed.*

33*a*. Return to an address of the House of Commons, to His Excellency the Governor General, dated 3rd February, 1890, for copies of all memorials, petitions and resolutions of the Legislative Assembly of the North-West Territories passed at its last session, whether addressed to His Excellency the Governor General or to the Parliament of Canada. Presented to the House of Commons, 10th February, 1890.—*Mr. Daly*.....*Not printed.*

33*b*. Copies of the several petitions presented to Council against the abolition of separate schools and the French language in the North-West Territories. Presented to the House of Commons, 11th February, 1890, by Mr. Colby.....*Not printed.*

33*c*. Return to an address of the House of Commons, to His Excellency the Governor General, dated 27th January, 1890, for copies of all resolutions of the Legislative Assembly of the North-West Territories, respecting the settlement of the Half-breed claims. Presented to the House of Commons, 21st February, 1890—*Hon. Mr. Laurier*.....*Not printed.*

33*d*. Return to an address of the House of Commons, to His Excellency the Governor General, dated 27th January, 1890, for copies of all Orders in Council, despatches, correspondence and documents relating to the resignation of the Advisory Council of the North-West Territories, and the appointment of their successors. Presented to the House of Commons, 24th February, 1890.—*Mr. White (Renfrew)*.....*Not printed.*

33*e*. Return to an order of the House of Commons, dated 23rd January, 1890, for a return showing, by years, the cost of printing the Ordinances and other official papers and publications in the French language from the time of the passage of the North-West Territories Act of 1877. 2. The number of copies of the Ordinances from time to time printed in said language. 3. The number distributed and the number remaining in stock. Presented to the House of Commons, 25th February, 1890.—*Mr. Denison*.....*Printed for both Distribution and Sessional Papers.*

33*f*. Return to an order of the House of Commons, dated 24th February, 1890, for a copy of the memorials sent by Joseph Holden and John Shera to the Hon. Edgar Dewdney, Minister of the Interior, respecting second homesteads in the Territories. Presented to the House of Commons, 26th March, 1890.—*Mr. Davin*.....*Not printed.*

33*g*. Return to an Order of the House of Commons, dated 24th February, 1890, for a return showing receipts and expenses of each North-West Territories Registry Office from 1887 to 1889. Presented to the House of Commons, 26th March, 1890—*Mr. Davin*.....*Not printed.*

33*h*. Correspondence in relation to certain assistance afforded to the Half-breeds at Fort la Corne and other places. Presented to the House of Commons, 1st May, 1890, by Hon. E. Dewdney—
Not printed.

33*i*. Statement respecting the purchase of seed grain (including a schedule of prices paid for wheat and oats). Presented to the House of Commons, 1st May, 1890, by Hon. E. Dewdney....*Not printed.*

33*j*. Statement respecting distribution of seed-grain and instructions as to the distribution thereof. Presented to the House of Commons, 1st May, 1890, by Hon. E. Dewdney.....*Not printed.*

33*k*. Memorandum with reference to the appropriation accounts of 1889, for certain of the provinces and the North-West Territories. Presented to the House of Commons, 1st May, 1890, by Hon. E. Dewdney.....*Not printed.*

33*l*. Statement regarding the claim of the Eau Clair and Bow River Lumber Company against the Government for lumber alleged to have been taken off their limits. Presented to the House of Commons, 1st May, 1890, by Hon. E. Dewdney .....*Not printed.*

33*m*. Correspondence, etc., respecting the St. Albert Bridge. Presented to the House of Commons, 1st May, 1890, by the Hon. E. Dewdney .....*Not printed.*

33*n*. Return to an order of the House of Commons, dated 21st April, 1890, for a return showing : 1. The number of acres of pasture land now under lease in the North-West Territories. 2. The amount paid the Government for rental of grazing leases during the past year. 3. The amount due the Government for arrears on pasture leases, and the names of the lessees in arrears for pasture lease rental. 4. The names of the lessees holding leases of territory upon which settlers are not allowed to take up land without the consent of the lease-holder, with the total area of such leases, and the location of each. Presented to the House of Commons, 9th May, 1890.—*Mr. Charlton*—
Not printed.

33*o*. List of schools under different denominations in the North-West Territories, 1889. Presented to the House of Commons, 12th May, 1890, by Hon. E. Dewdney.....*Not printed.*

34. *See Sessional Paper No. 17a.*

35. Certified copy of a report of the Honorable the Privy Council, approved by His Excellency in Council on the 17th August, 1889, on the subject of the Copyright Act of last session, together with correspondence and other papers referring to the same subject. Presented to the House of Commons, 10th February, 1890, by Sir John Thompson...*Printed for both Distribution and Sessional Papers.*

36. Copies of reports of a committee of the Honorable the Privy Council, with reference to the granting a timber license to Mr. John Adams. Presented to the House of Commons, 17th February, 1890, by Sir John Macdonald.....*Not printed.*

36*a*. Return to an order of the House of Commons, dated 19th March, 1890, for a list of timber limits granted by the Dominion Government since March 1st, 1885 ; the names of the parties to whom granted, with date of grant ; the area of each limit granted ; whether granted to highest bidder at public competition, and the amount of bonus, if any, in each case received. Presented to the House of Commons, 15th April, 1890.—*Mr. Charlton*.....*Printed for Sessional Papers only.*

37. Return to an address of the House of Commons, to His Excellency the Governor General, dated 27th January, 1890, for copies of all Orders in Council or departmental orders prohibiting American vessels from carrying bonded freight from American ports to Victoria, British Columbia, or any other Canadian port ; and copies of all Orders in Council or departmental orders revoking the same, and all correspondence connected therewith. Presented to the House of Commons, 18th February, 1890.—*Hon. Mr. Laurier* .....*Not printed.*

38. Return to an order of the House of Commons, dated 6th February, 1889, for a return giving the total cost of issuing the budget speech each year since 1867, together with a statement showing the number of copies issued during said period. Presented to the House of Commons, 18th February, 1890.—*Mr. Landerkin*.....*Not printed.*

39. Return to an order of the House of Commons, dated 23rd January, 1890, for a statement of all the expenses generally incurred to this day for the making of the electoral lists for the Dominion of Canada. Presented to the House of Commons, 25th February, 1890.—*Mr. Casgrain*—
Not printed.

40. Return to an order of the House of Commons, dated 12th February, 1890, for copies of all papers, correspondence and agreements between the Government and the proprietors of the extension of the Derby Branch Railway in relation to the said extension, the said extension having being built by the aid of Government subsidy, but never yet operated. Presented to the House of Commons, 26th February, 1890.—*Mr. Mitchell*.....*Not printed.*

41. Return to an order of the House of Commons, dated 12th February, 1890, for copies of all petitions and correspondence respecting the request for the construction of a siding, on the line of the Intercolonial Railway, at the station of St. Jean Chrysostôme, in the county of Lévis. Presented to the House of Commons, 26th February, 1890.—*Mr. Guay*.....*Not printed.*

41*a*. Return to an order of the House of Commons, dated 12th February, 1890, for a statement showing the names of all persons who sold to the Dominion Government since the 1st January, 1886, property located in St. Laurent and Lauzon Wards in the town of Lévis, with a view to widening the roadway of the Intercolonial Railway, and an extension of the station at Lévis; the amount paid to each proprietor; the amounts paid for commissions; the rate of percentage, and the persons to whom such amounts were paid. Presented to the House of Commons, 26th March, 1890.—*Mr. Guay*.. ....*Not printed.*

41*b*. Return to an order of the House of Commons, dated 10th March, 1890, for copies of all petitions to the Minister of Railways since 1st January, 1889, from employees of the Intercolonial Railway workshops at Moncton and the Prince Edward Island Railway, asking for an increase of wages; and also for copies of all answers to the same from the Department of Railways or any official thereof. Presented to the House of Commons, 21st April, 1890.—*Mr. Davies*.....*Not printed.*

41*c*. Return to an order of the House of Commons, dated 10th March, 1890, for copies of all petitions forwarded to the Government by Messrs. Nazaire Ouellet, Geo. Voyer, Alfred Ouellet, F. Coté and others, in relation to damages caused to their properties by the Intercolonial Railway. Presented to the House of Commons, 21st April, 1890.—*Mr. Fiset*.....*Not printed.*

41*d*. Return to an order of the House of Commons, dated 10th March, 1890, for a return showing the past operation of the Intercolonial Railway employees insurance' scheme, and especially (*a*) the annual receipts and expenditure, including salaries of officials for each year the scheme has been in operation; (*b*) the amounts paid each year out of the fund to the employees or their representatives, and whether for death or injury; (*c*) the surplus (if any) now on hand of such fund. Presented to the House of Commons, 22nd April, 1890.—*Mr. Davies*.....*Not printed.*

41*e*. Return to an order of the House of Commons, dated 24th February, 1890, for a return of the casualties to trains on the Intercolonial Railway, arising from collision, broken rails or otherwise, for the calendar year 1889, the respective causes and dates, the amount of damage (if any) in each case to property, the amount of compensation paid to owners of property destroyed or damaged, as well as amount of claims for loss or damage to property (if any) unsettled. Presented to the House of Commons, 22nd April, 1890.—*Mr. Weldon* (*St. John*).. ....*Not printed.*

41*f*. Return to an order of the House of Commons, dated 10th March, 1890, for a return showing (*a*) the names and number of officials' cars on the Intercolonial Railway and its branches; (*b*) the original cost, date and place of building of each car, or name of person or company from whom purchased; (*c*) the cost of repairs to, or expenditure in, each of such cars since acquired; (*d*) the names, salaries and expenses of each employee on such official cars; (*e*) the annual expenses of providing the supplies to each such car. Presented to the House of Commons, 9th May, 1890.—*Mr. Davies*—

Not printed.

41*g*. Return to an address of the Senate to His Excellency the Governor General, dated 1st May, 1890, for a return showing: 1. The rate per ton charged for carrying coal in car loads over the Intercolonial Railway from the mines of Nova Scotia to St. John, Moncton, Newcastle and Campbellton in New Brunswiçk, and to Rimouski, Rivière du Loup and Quebec, and by the same, with its connections, to Montreal and Toronto. 2. The rate per ton for carrying flour, wheat and other goods of the same class in car loads from Toronto, Montreal and Quebec to Campbellton, Newcastle, Moncton and St. John in New Brunswick, and to Amherst, Truro, Pictou and Halifax in Nova Scotia. 3. The number of freight trains which passed each way between Nova Scotia and Quebec and Ontario, and between New Brunswick and the same provinces, in the year 1889. 4. How many trains carried goods from the west to be shipped at Halifax and St. John, respectively, during 1889, and up to the present date in 1890. Presented to the Senate, 16th May, 1890.—*Hon. Mr. Wark*.....*Not printed.*

42. Return to an order of the House of Commons, dated 23rd January, 1890, for a return showing the amount of money expended by the Dominion in each province since Confederation to the 30th of June, 1889, under the following heads: 1. Subsidies to railways in each province, excepting the Canada Pacific main line and Sault Branch. 2. The several railways built by the Dominion in each Province, including the Intercolonial branches and extensions, but not the main line as originally constructed. 3. The buildings erected or purchased in each province, their location and cost. Presented to the House of Commons, 26th February, 1890.—*Mr. McMullen*—

Printed for both Distribution and Sessional Papers.

42*a*. Amended return (in part) to a return presented to the House of Commons on the 26th February, 1890, showing the amount of money expended by the Dominion in each province since Confederation to the 30th June, 1889, under the following heads: 1. Subsidies to railways in each province, excepting the Canada Pacific main line and Sault Branch. 2. The several railways built by the Dominion in each province, including the Intercolonial branches and extensions, but not the main

line as originally constructed. 3. The buildings erected or purchased in each province, their location and cost. Presented to the House of Commons, 22nd April, 1890.—*Mr. McMullen*

Printed for both Distribution and Sessional Papers.

42*b*. Return to an order of the House of Commons, dated 21st April, 1890, for a statement of the amount of subsidies voted to the Canada Atlantic Railway Company for the construction of their bridge over the St. Lawrence River, between Coteau and Valleyfield, the amount paid by the Government up to date, and the amount unearned or still to be paid. Presented to the House of Commons, 2nd May, 1890.—*Mr. Bergeron*..... *Not printed.*

42*c*. Return to an order of the House of Commons, dated 21st April, 1890, for a statement of the amount of subsidies voted by Parliament to the Beauharnois Junction Railway Company, the amount paid by the Government up to date, and the amount still due or unearned. Presented to the House of Commons, 2nd May, 1890.—*Mr. Bergeron*..... *Not printed.*

42*d*. Papers, correspondence, etc., respecting subsidies to certain railway companies, and towards the construction of certain railways, as follows: Montreal and Ottawa Railway Company (late Vaudreuil and Prescott Railway Company); Waterloo Junction Railway Company; Northern Pacific Junction Railway Company; Ottawa, Morrisburg and New York Railway Company; Erie and Huron Railway Company; Brockville, Westport and Sault Ste. Marie Railway Company; Manitoulin and North Shore Railway Company; Port Arthur, Duluth and Western Railway Company; Lake Erie and Detroit River Railway (formerly Amherstburg, Lake Shore and Blenheim Railway Company); Lindsay, Bobcaygeon and Pontypool Railway Company; Kingston, Smith's Falls and Ottawa Railway Company; Ottawa and Parry Sound Railway Company; Bay of Quinté and Lake Nipissing Railway Company; Cobourg, Northumberland and Pacific Railway Company; St. Stephen and Milltown Railway Company; Woodstock and Centreville Railway Company; St. John River Railway Company, N.B.; Central Railway Company, N.B.; Shelburne and Liverpool to Annapolis Railway Company; Inverness and Richmond Railway Company; International Railway Company; Montreal and Sorel Railway Company; Pontiac Pacific Junction Railway Company; Montreal and Lake Maskinongé Railway Company; Great Eastern Railway Company; Drummond County Railway Company; Oxford Mountain Railway Company; Maskinongé and Nipissing Railway Company; Jacques Cartier Union Railway Company; Quebec Central Railway Company; Quebec and Lake St. John Railway Company; Stewiacke Valley and Lansdowne Railway Company; Temiscouata Railway Company; Tobique Valley Railway Company. Presented to the House of Commons, 14th May, 1890, by Sir John A. Macdonald..... *Not printed.*

43. Return to an order of the House of Commons, dated 12th February, 1890, for a list of Indian reserves within the Province of Manitoba, giving location and area of each one, number of Indians belonging to it at the time of location of such reserve, and number now actually living on same. Presented to the House of Commons, 26th February, 1890.—*Mr. LaRivière*—

Printed for both Distribution and Sessional Papers.

43*a*. Return to an order of the House of Commons, dated 20th January, 1890, for a return giving the names of all persons who were tried before a magistrate for selling intoxicating liquors to Indians in the county of Grey or Bruce, in the year 1888-89; together with all papers, documents and letters on the subject; also the name of the party who laid the information, the name of the magistrate before whom it was tried, the name of the constable employed, and the name of the lawyer retained in each case, together with the decisions of the magistrate, stating the fines imposed, if any; also if any appeals were made from the decisions of the magistrate, stating before what judge the appeals were tried and what was the result: giving the cost of each trial before the magistrate, and of each appeal before the judge, together with the name, occupation and post office address of every person who received money for any service whatever, either at the trial at the magistrate's court or at the appeal before the judge; the total cost of all the trials, the total fines imposed and collected. If costs were refused at any trial, giving the reason for such refusal; also showing whether any of the Indians who received whiskey were electors of Bruce under the Electoral Franchise Act of Canada. Presented to the House of Commons, 10th March, 1890.—*Mr. Landerkin*..... *Not printed.*

43*b*. Return to an order of the House of Commons, dated 10th March, 1890, for a statement showing: 1. All moneys in the hands of the Superintendent General of Indian Affairs, belonging to the Indians of the Caughnawaga Reserve. 2. All the several sources from which the said moneys were derived. Presented to the House of Commons, 26th March, 1890.—*Mr. Doyon*..... *Not printed.*

43c. Return to an order of the House of Commons, dated 10th March, 1890, for copies of all correspondence between the Indian Department and the agent or chiefs of the Caughnawaga Reserve, in relation to any indemnity obtained by the Indians of the reserve, on the ground that the extent of their reserve has been considerably diminished by encroachments. Presented to the House of Commons, 9th May, 1890.—*Mr. Doyon*.....*Not printed.*

44. Statement of the affairs of the British Canadian Loan and Investment Company, on 31st December, 1889. Presented to the House of Commons, 16th May, 1890, by Hon. Mr. Speaker...*Not printed.*

45. Return to an address of the House of Commons to His Excellency the Governor General, dated 1st April, 1889, for a return : 1. Giving the names and places of residence of the commissioners appointed in 1883 for the purpose of examining and reporting upon the fitness and eligibility of persons appearing before them for examination and qualification as inspectors of the hulls of freight and passenger steamers plying in Canadian waters. 2. Copies of the circular sent out inviting competitors to meet at Ottawa, and the date or dates so mentioned from time to time. 3. The names and places of residence of all persons who were so examined at each and every meeting of the said commissioners up to date. 4. Copies of the recommendation or recommendations of any of the said commissioners, or any one of them, respecting the said examination or the qualifications, or otherwise, of any or all who underwent such examination at the first or any subsequent meeting of the said commissioners, or either of them. 5. The name and place of residence of each and every inspector of freight and passenger steamer hulls appointed by the Government from 1882 to date ; indicating who were appointed after undergoing and passing the necessary examination, as well as giving the name and place of residence of each and every inspector of such hulls who was appointed without having successfully passed the said examination, together with the name and place of residence of any inspector so appointed, since 1882 to date, who had been dismissed or had resigned within the time specified, and the cause assigned for such dismissal or resignation. 6. The name and place of residence of any person appointed to fill any vacancy or addition as inspector of said hulls. 7. Copies of all correspondence between the Minister of Marine and any person respecting any of the questions enumerated herein. Presented to the House of Commons, 3rd March, 1890.—*Mr. Wilson (Elgin)*.....*Not printed.*

46. Return to an address of the House of Commons to His Excellency the Governor General dated 20th February, 1890, for a copy of the report of Mr. A. F. Wood upon the investigation which he has made into affairs connected with the Welland Canal. Presented to the House of Commons, 6th March, 1890.—*Mr. Edgar*.....*Not printed.*

46a. Return to an order of the House of Commons, dated 29th January, 1890, for a return showing the date of the creation of the Trent Valley Canal Commission, the time and place of the first sitting, the actual number of days it has actually been occupied in the work appertaining to the said Commission, and the number of days and of sittings held in taking and receiving evidence, and the places whereat thus far sittings of the commission have been held. Presented to the House of Commons, 5th March, 1890.—*Mr. Barron*.....*Not printed.*

46b. Return to an order of the House of Commons, dated 3rd March, 1890, for a statement showing, for each year since 1878 : 1. The number of vessels which have passed through the Chambly Canal, and their tonnage. 2. The amount of, and the description of freight carried by these vessels. 3. The amount of tolls collected in the said several years on the said canal. Presented to the House of Commons, 17th March, 1890.—*Mr. Préfontaine*.....*Not printed.*

46c. Supplementary Report of A. F. Wood, Esq., of the Welland Canal Investigation with suggestions as to changes in the present system of management. Presented to the Senate, 1st May, 1890, by Hon. Mr. Abbott.....*Not printed.*

47. Return to an order of the House of Commons, dated 24th February, 1890, for a return of the number of cases entered in the Vice-Admiralty Court of Quebec, during the years 1885, 1886, 1887, 1888 and 1889 ; the number of cases entered during the same years in the Vice-Admiralty Court of Nova Scotia ; and the number of cases entered during the same year in the Vice-Admiralty Court of New Brunswick. Presented to the House of Commons, 5th March, 1890.—*Mr. Weldon (St. John)*.....*Not printed.*

48. Return to an order of the House of Commons, dated 23rd January, 1890, for a statement in detail showing the expenditure made in connection with the Marine and Emigrant Hospital at Quebec, since the 30th June, 1886, the said statement giving : 1. The sum voted each year by the Dominion Parliament. 2. The amount expended. 3. The number of sailors and emigrants taken in each year, and the total number of days that each one of these passed in the hospital. 4. The number of persons not being sailors or emigrants, taken into the said hospital, and the number of days that each one of this class passed there. 5. The total cost day by day of each patient. 6. The amount received by the Government for the patients who are neither emigrants nor sailors. 7. The amount

received from the Sick Mariners' Fund under the Act 49 Vic., chap. 76, section 16. Presented to the House of Commons, 5th March, 1890.—*Mr. Langelier (Quebec Centre)*—

Printed for both Distribution and Sessional Papers.

48*a*. Return to an address of the House of Commons to His Excellency the Governor General, dated 22nd January, 1890, for copies of all Orders in Council, correspondence and documents respecting the establishment of the Marine Hospital at Quebec and respecting the closing of the same. Presented to the House of Commons, 17th March, 1890.—*Mr. Langelier (Quebec Centre)*.....*Not printed.*

49. Return to an order of the House of Commons, dated 29th January, 1890, for a return showing whether or not the island known as Sultana Island, in the Lake of the Woods, has been sold, and if sold, showing by what right or title the Government of Canada claimed to have the power to sell the same; showing, also, all correspondence had between the Government of Canada and the purchaser or purchasers of said island, or the solicitors or other persons acting on behalf of such purchaser or purchasers (if any); showing, also, the area of land contained in said island, and the value and extent of the pine timber thereupon, and the price or amount for which the said island was sold, and the names and addresses of the purchaser or purchasers thereof. Also any map showing locality of island. Presented to the House of Commons, 5th March, 1890.—*Mr. Barron*—

Not printed.

49*a*. Supplementary return to an order of the House of Commons, dated 29th January, 1890, for a return showing whether or not the island known as Sultana Island, in the Lake of the Woods, has been sold, and if so, showing by what right or title the Government of Canada claimed to have the power to sell the same; showing, also, all correspondence had between the Government of Canada and the purchaser or purchasers of said island, or the solicitors or other persons acting on behalf of such purchaser or purchasers (if any); showing, also, the area of land contained in said island, and the value and extent of the pine timber thereupon, and the price or amount for which the said island was sold, and the names and addresses of the purchaser or purchasers thereof. Also any map showing locality of island. Presented to the House of Commons, 2nd April, 1890.—*Mr. Barron*.....*Not printed.*

50. Return to an order of the House of Commons, dated 17th April, 1889, for a return showing the number of permanent clerks employed by the Department of the Interior, including inside and outside service. And also the number of extra clerks at present in the employ of the said department in the same service. Presented to the House of Commons, 5th March, 1890.—*Mr. Weldon (St. John)*—

Not printed.

51. Official correspondence in the matter of Private C. J. Hurrell, applying for further compensation as a wounded volunteer. Presented to the House of Commons, 7th March, 1890, by Sir Apolphe Caron.....*Not printed.*

51*a*. Official correspondence in the matter of Valiquette's pension. Presented to the House of Commons, 7th March, 1890, by Sir Adolphe Caron.....*Not printed.*

51*b*. Return to an order of the House of Commons, dated 26th March, 1890, for a statement showing: 1. The date when Private C. T. Hurrell was notified by the Government of the passing of the passing of the Order in Council of the 13th November, 1888, granting him a pension. 2. The amounts paid him by way of gratuity or pension, and the dates of such payments. Presented to the House of Commons, 18th April, 1890.—*Mr. Mulock*.....*Not printed.*

51*c*. Copy of a declaration made by Antoine Valiquette, father of the late Primat Valiquette, sergeant in the 65th Battalion. Presented to the House of Commons, 18th April, 1890, by Sir A. P. Caron.

Not printed.

52. Return to an order of the House of Commons, dated 30th January, 1890, for copies of all letters to the Government asking that engineers be sent to examine Kettle Creek, between St. Thomas and Port Stanley, with a view to ascertaining the feasibility of building a canal; and all reports, maps and other documents sent in by such engineers. Presented to the House of Commons, 10th March, 1890.—*Mr. Wilson (Elgin)*.....*Not printed.*

53. Return to an order of the House of Commons, dated 12th February, 1890, for copies of all correspondence between the Government, or any of its departments, and the corporation known as the "Président et syndics de la commune de la seigneurie d'Yamaska," respecting damages occasioned to their lands by the dam erected in the Yamaska River. Presented to the House of Commons, 10th March, 1890.—*Hon. Mr. Laurier*.....*Not printed.*

53*a*. Return to an order of the House of Commons, dated 24th February, 1890, for copies of all claims made by Elphège Cardin, Jean Cardin, George Tonnancourt and Bruno St. Germain, to be compensated for damages occasioned to their lands by the dam erected in the Yamaska River; of all correspondence arising out of such claims; together with a statement of all sums allowed to each of them in settlement of their claims. Presented to the House of Commons, 20th March, 1890.—*Hon. Mr. Laurier*.....*Not printed.*

53*b*. Return to an order of the House of Commons, dated 12th February, 1890, for copies of the late reports made by the Engineer of the Public Works Department respecting works to be carried out at Rivière du Sud, in the county of Montmagny. Presented to the House of Commons, 17th March, 1890.—*Mr. Choquette*..... *Not printed.*

54. Return to an order of the House of Commons, dated 30th January, 1890, for a return of all correspondence, petitions, reports or other papers respecting the sale, ownership or condition of the Dundas and Waterloo Macadamized Road, since the close of the session of 1889. Presented to the House of Commons, 10th March, 1890—*Mr. Bain (Wentworth)*..... *Not printed.*

54*a*. Return to an order of the House of Commons, dated 29th January, 1890, for copies of all petitions, reports of engineers, and all correspondence in reference to the dredging of the bar at the mouth of the river Thames, in the county of Kent, Ontario. Presented to the House of Commons, 10th March, 1890.—*Mr. Campbell*..... *Not printed.*

55. Return to an order of the House of Commons, dated 22nd January, 1890, for copies of all correspondence and documents respecting the appointment of Mr. Joseph Garneau as Superintendent of Government works at Quebec; and respecting his removal and the substitution of a person named L. P. Lépine. Presented to the House of Commons, 10th March, 1890.—*Mr. Langelier (Quebec Centre).*..... *Not printed.*

56. Return to an order of the House of Commons, dated 5th February, 1890, for a return of a copy of the contract and specification for the erection of the Post Office and Custom House building at Annapolis, Nova Scotia; the several tenders and amounts thereof; also any order or orders altering the quality and nature of the stone used in the construction. Presented to the House of Commons, 10th March, 1890.—*Mr. Weldon (St. John)*..... *Not printed.*

56*a*. Return to an order of the House of Commons, dated 4th March, 1889, for copies of all petitions and resolutions forwarded to the Government by the citizens or Corporation of the town of Lévis, in relation to the building of a post office in the said town. Presented to the House of Commons, 10th March, 1890.—*Mr. Guay*..... *Not printed.*

56*b*. Return to an order of the House of Commons, dated 12th February, 1890, for copies of all petitions, letters, etc., to the Department at Ottawa, praying for a post office at Palmer Road, Prince Edward Island; also all correspondence to and from the Post Office Department at Ottawa and the Post Office Inspector at Charlottetown, Prince Edward Island, on the same subject. Presented to the House of Commons, 21st April, 1890.—*Mr. Perry*..... *Not printed.*

56*c*. Return to an order of the House of Commons, dated 12th February, 1890, for copies of two enquiries made by Messrs. Bourgeois, King and Bolduc, respecting the post office at Pierreville, P.Q.—*Mr. Choquette.*..... *Not printed.*

57. Return to an order of the House of Commons, dated 11th March, 1889, for copies of all correspondence, reports, etc., respecting the wharf at St. Roch des Aulnets, in the county of L'Islet, between the Department of Public Works and the late Charles Frs. Roy, surveyor, and the residents of the said municipality interested therein. Presented to the House of Commons, 10th March, 1890.—*Mr. Casgrain*..... *Not printed.*

57*a*. Return to an order of the House of Commons, dated 27th January, 1890, for copies of the accounts connected with the building of a wharf at Kamouraska, in the province of Quebec, made up in the course of the year 1889. Presented to the House of Commons, 10th March, 1890.—*Mr. Dessaint*—*Not printed.*

58. Return to an order of the House of Commons, dated 27th January, 1890, for a statement, in detail, showing the expenditure made in connection with repairs to Tignish Breakwater, Prince Edward Island, during 1889; the date of commencement of work, and when completed; the name of party in charge of work. Presented to the House of Commons, 10th March, 1890.—*Mr. Perry*—*Not printed.*

58*a*. Return to an order of the House of Commons, dated 26th February, 1890, for a statement showing the number of Government wharves, piers and breakwaters repaired in Prince Edward Island during the year 1889, the amount expended on each of said wharves, piers and breakwaters. Presented to the House of Commons, 20th March, 1890.—*Mr. Perry*..... *Not printed.*

59. Return to an order of the House of Commons, dated 24th February, 1890, for copies of the reports made by the chief engineer relating to the survey of Cove Head Harbor, in Prince Edward Island, four or five years ago. Presented to the House of Commons, 10th March, 1890.—*Mr. Davies*—*Not printed.*

59*a*. Return to an order of the House of Commons, dated 20th January, 1890, for a copy of Government engineer's report of survey of Harbors of Pinette and Wood's Island, and also copy of report of survey of New London Harbor and Breakwater, in the province of Prince Edward Island. Presented to the House of Commons, 10th March, 1890.—*Mr. Welsh*..... *Not printed.*

59*b*. Return to an order of the House of Commons, dated 24th February, 1890, for copies of any reports made by the chief engineer relating to survey of Tracadie Harbor, Prince Edward Island, some years ago. Presented to the House of Commons, 20th March, 1890.—*Mr. Davies*....*Not printed.*

59*c*. Return to an order of the House of Commons, dated 10th March, 1890, for a return showing the date of commencing the work of blasting the rock in Cascumpec Harbor, in Prince Edward Island, in the summer of 1889, the date at which the work stopped, the names of workmen employed, the amount of wages paid to each diver and to each laborer; also the whole amount expended in blasting said rock up to December, 1889. Presented to the House of Commons, 1st April, 1890.—*Mr. Perry*.....*Not printed.*

59*d*. Return to an order of the House of Commens, dated 10th March, 1890, for a return showing the number of tenders made or put in for the public work at the eastern gap of the Toronto Harbor works; the name or names of each person or company tendering for the work and the amount of each tender and the terms thereof, with a statement of the approximate quantities upon which each tender was calculated; and of all letters and correspondence, statements, documents and papers pertaining to the letting of the contract and to any and all of the tenders. Presented to the House of Commons, 1st April, 1890.—*Mr. Barron*.....*Not printed.*

59*e*. Return to an order of the House of Commons, dated 19th March, 1890, for a return of all correspondence, petitions, memorials, reports of the chief engineer of the Department relative to the necessity and expediency of dredging and otherwise improving the harbor at Picton, Bay of Quinté, since 1st January, 1883; and also containing all correspondence, petitions, memorials and reports concerning the desirability or expediency of construction of public buildings at the said town of Picton for the accommodation of post office, customs and inland revenue offices in that town, since 1st January, 1886. Presented to the House of Commons, 2nd April, 1890.—*Mr. Platt*—

Not printed.

59*f*. Return to an order of the House of Commons, dated 17th March, 1890, for copies of all reports of the chief engineer on the pier at Hall's Harbor, Nova Scotia, since the year 1882; and for copies of all correspondence relating to said pier. Presented to the House of Commons, 2nd April, 1890.—*Mr. Borden*.....*Not printed.*

59*g*. Statements and correspondence in reference to the Harbor Works at Quebec, Graving Dock at Esquimalt, etc. Presented to the House of Commons, 16th May, 1890, by Sir Hector Langevin—

Printed for both Distribution and Sessional Papers.

60. Return to an order of the House of Commons, dated 30th January, 1890, for a statement showing the amount of dredging done during the season of 1889 in Prince Edward Island by the dredge "Prince Edward;" the names of harbors and other places dredged during said season, and the amount of work done in each harbor. Presented to the House of Commons, 10th March, 1890.—*Mr. Perry*.....*Not printed.*

61. Return to an order of the House of Commons, dated 24th February, 1890, for copies of all correspondence which has passed between the Auditor General and the Minister of the Interior, or any other person, in reference to the allowance for travelling expenses of William McGirr, private secretary to the Superintendent General of Indian Affairs. Presented to the House of Commons, 10th March, 1890.—*Mr. Lister*.....*Not printed.*

62. Return to an address of the House of Commons to His Excellency the Governor General, dated 29th January, 1890, for a copy of the quarantine regulations of Grosse Isle, together with all Orders in Council and instructions given to the medical officers at said station. Presented to the House of Commons, 10th March, 1890.—*Mr. Landerkin*.....*Not printed.*

63. Return to an order of the House of Commons, dated 12th February, 1890, for copies of correspondence in connection with a claim, made by the district of St. Peter's, in the county of Richmond, for medical attendance and board of Kenneth Chisholm, a sick mariner, belonging to the schooner "Jeanie." Presented to the House of Commons, 10th March, 1890.—*Mr. Flynn*—

Not printed.

64. Return to an order of the House of Commons, dated 24th January, 1890, for a return showing: 1. The total number of Chinese immigrants who have arrived in the Dominion of Canada from the 31st March, 1887, to the 31st December, 1889, specifying the ports at which such immigrants have arrived. 2. The amount of fees or duties collected from Chinese immigrants during the same period. 3. The number of certificates of residence that have been issued to Chinese as provided for under section 13 of the Act to restrict and regulate Chinese immigration into Canada, since the passage of the Act. 4. The number of Chinese who have been detected in attempting to land in Canada upon fraudulent certificates and who were prevented by the courts from doing so. 5. Copies of all correspondence having reference to the removal from office of Mr. Vroman *alias* Mr. Gardner, and also all correspondence having reference to the appointment of a Chinaman to the

position of interpreter at the port of Vancouver, in the place of the said Mr. Gardner. 6. The number of Chinese who have passed through Canada in bond for passage from Vancouver by steamer to China, and the regulations that have been prescribed for placing them securely on board said steamers to prevent their disembarkation into Canada. 7. The total number of Chinese other than those in bond who have left Canada during the first mentioned period, and the number of return certificates that have been issued. Presented to the House of Commons, 10th March, 1890. —*Mr. Gordon*.....*Printed for Sessional Papers only.*

65. Return to an address of the Senate to His Excellency the Governor General, dated 21st January, 1890, for copies of all reports and other communications in reference to the deposit of sawdust, slabs, or other offensive material, in the Ottawa and other rivers of the Dominion. Presented to the Senate, 10th March, 1890.—*Hon. Mr. Clemow*—

Presented for both Distribution and Sessional Papers.

65*a*. Return to an order of the House of Commons, dated 24th February, 1890, for a copy of the report of Sandford Fleming, C.E., of the examination made by him as to sawdust, &c., put in the Ottawa by the saw mills at the Chaudière and other mills on the Ottawa River. Presented to the House of Commons, 20th March, 1890.—*Mr. Landerkin*.....*Not printed.*

66. Return to an address of the Senate to His Excellency the Governor General, dated 22nd January, 1890, for a detailed statement showing the settlement effected with the lessees of hydraulic lots at the Chaudière, city of Ottawa; as likewise copies of new leases entered into with the several lessees of the said hydraulic lots. Presented to the Senate, 10th March, 1890.—*Hon. Mr. Clemow.*

Not printed.

66*a*. Return to an order of the House of Commons, dated 24th February, 1890, for return showing the names of all parties in arrears for hydraulic and other rents up to the 1st instant, and the amounts respectively due by such parties. Presented to the House of Commons, 22nd April, 1890.—*Mr. Somerville*.....*Not printed.*

67. Return to an address of the House of Commons to His Excellency the Governor General, dated 29th January, 1890, for copies of all petitions, correspondence and documents of every nature respecting the Great Eastern Railway, or any other line of railway which it is proposed to lay between Lévis and Montreal, following the course of the river St. Lawrence. Presented to the House of Commons, 12th March, 1890.—*Mr. Rinfret*.....*Not printed.*

68. Report in relation to the appointment of non-commissioned officers in the Royal Military College. Presented to the House of Commons, 13th March, 1890, by Sir A. P. Caron.....*Not printed.*

69. Certified copy of a report of a Committee of the Honorable the Privy Council, approved by His Excellency the Governor General in Council on the 11th January, 1885, in relation to matters between the Government and the city of Ottawa. Presented to the House of Commons, 17th March, 1890, by Sir Hector Langevin.....*Not printed.*

70. Return to an address of the House of Commons to His Excellency the Governor General, dated 27th January, 1890, for copies of the reports or opinions of the Law Officers of the Crown relating to the Act passed by the Legislature of the province of Quebec intituled: "An Act for the settlement of the Jesuits' Estates," and also copies of the case or cases or other documents or reports submitted to the said Law Officers, or to Her Majesty's Secretary of State for the Colonies, in relation to the said Act, and upon which the said opinions were obtained, and also all the despatches and correspondence in reference thereto. Presented to the House of Commons, 17th March, 1890.—*Mr. O'Brien*.....*Printed for both Distribution and Sessional Papers.*

71. Return to an order of the House of Commons, dated 24th February, 1890, for a statement showing, in detail, the population by origin, according to the census of 1885, of that part of the provisional district of Saskatchewan lying to the south of the line between townships 47 and 48, and bounded on the west by the line between ranges 11 and 12, west of the 3rd initial meridian, and on the east by the 3rd initial meridian, in the Dominion Lands system of survey, now the electoral district of Batoche. Also of that part of the same provisional district lying to the east of the 3rd initial meridian in the Dominion Land system of survey, and bounded on the north by the southern boundary of the electoral district of Prince Albert, now the electoral district of Kinistino. Presented to the House of Commons, 17th March, 1890.—*Mr. Laurier*.....*Not printed.*

72. Return to an order of the House of Commons, dated 12th February, 1890, for a return showing the annual losses of ships since 1868 in the Gulf of St. Lawrence and on the Atlantic coast and Bay of Fundy, owing to tides, currents and fogs, with the name and tonnage of each vessel, and such particulars in each case as to the causes and extent of damage, as may be in the possession of the Government. Presented to the House of Commons, 17th March, 1890.—*Mr. Curran*—

Printed for Sessional Papers only.

73. Return to an order of the House of Commons, dated 24th February, 1890, for a return showing the number of Reports of the Geological Survey published resp ectively for each year of the last ten years, the number sold each year, the number distributed gratuitously, and the number still on hand. Presented to the House of Commons, 17th March, 1890.—*Mr. Ferguson (Welland)*—
Printed for Sessional Papers only.

74. Correspondence of the Governments of Ontario and Quebec in reference to the ownership of the beds of harbors, rivers, etc. Presented to the House of Commons, 19th March, 1890, by Sir John Thompson.....*Printed for both Distribution and Sessional Papers.*

75. Statement, in detail, of Receipts and Payments of Canada, for the eight months ending 28th February, for the years 1889 and 1890 respectively. Presented to the House of Commons, 20th March, 1890, by Hon. G. E. Foster.....*Not printed.*

76. Return to an address of the House of Commons, to His Excellency the Governor G eneral, dated 29th January, 1890, for : 1. Copies of all petitions addressed to his Excellency the Governor General by settlers in the districts of Cranberry, Cedar, Wellington, Nanoose and Nanaimo, British Columbia, asking the privilege of obtaining the lands on which they had squatted on the Island Railway reserve on ordinary terms allowed to settlers, viz., that their grant should include surface and minerals. 2. For copies of all Orders in Council passed to authorise a commission to enquire into the claims of said settlers. Presented to the House of Commons, 26th March, 1890.—*Hon. Mr. Laurier*.....*Not printed.*

77. Return to an order of the House of Commons, dated 19th March, 1890, showing salary and remuneration paid to Mr. Arthur Prieur, employee of the House, as translator or otherwise, and the total amount received by him since his employment in any capacity. Presented to the House of Commons, 31st March, 1890, by Hon. Mr. Speaker.....*Not printed.*

78. Return to an order of the House of Commons, dated 19th March, 1890, for a return showing : 1. The actual cost of first construction of the Montreal Court House, 1851-57. 2. The amount spent for repairs since each year down to Confederation. Presented to the House of Commons, 1st April, 1890.—*Mr. Curran*.....*Not printed.*

79. Return to an order of the House of Commons, dated 12th February, 1890, for a return showing : 1. The total amount of money expended in dredging McGregor's Creek, in the town of Chatham, Ontario. 2. The amount expended for piling and planking the same. The name of each contractor, and amount of their several contracts. 3. The amount of money paid property owners for damage done to their property in consequence of such dredging, with the name and amount paid each property owner. 4. The name and amount of all claimants whose claims have been rejected, or which are still under the consideration of the Government. Presented to the House of Commons, 1st April, 1890.—*Mr. Campbell*.....*Not printed.*

80. Return to an order of the House of Commons, dated 24th February, 1890, for the report and plans of the Chief Engineer of the Department of Public Works employed to make a survey and examination, with a view to the construction of an inter-provincial bridge across the Ottawa River, between the village of La Passe, in the province of Ontario, and the village of Fort Coulonge, in the province of Quebec. Presented to the House of Commons, 1st April, 1890.—*Mr. Bryson*—
Not printed.

81. Return to an order of the House of Commons, dated 24th February, 1890, for a return showing the number of self-binders, reapers and mowers exported from the Dominion during the past three years ; giving the names of the exporters, the countries to which exported, and the amount of drawback allowed on each of the articles so exported. Presented to the House of Commons, 3rd April, 1890.—*Mr. Paterson (Brant)*.....*Not printed.*

82. Return to an address of the House of Commons to His Excellency the Governor General, dated 22nd January, 1890, for copies of all correspondence between the officers of the Temperance Colonization Company, and the officers of the Saskatchewan Land and Homestead Company, and the Department of the Interior, or any member of the Government ; and all correspondence between Rev. Alexander Sutherland and John T. Moore and the Department of the Interior, or any member of the Government, in relation to the location of lands and claims for placing immigrants on lands, and compensation for assisting immigration to the said lands, together with all Orders in Council relating to such claims. Presented to the House of Commons, 14th April, 1890.—*Mr. Somerville*—
Not printed.

82*a*. Supplementary return to an address of the House of Commons, to His Excellency the Governor General, dated 22nd January, 1890, for copies of all correspondence between the officers of the Temperance Colonization Company and the officers of the Saskatchewan Land and Homestead Company and the Department of the Interior, or any member of the Government ; and all correspondence between the Rev. Alexander Sutherland and John T. Moore and the Department of the

Interior, or any member of the Government, in relation to the location of lands and claims for placing immigrants on lands, and compensation for assisting immigration to the said lands, together with all Orders in Council relating to such claims. Presented to the House of Commons, 18th April, 1890.—*Mr. Somerville* ..... *Not printed.*

82*b*. Return to an order of the House of Commons, dated 17th March, 1890, for a return of all correspondence, memorials and agreements between the Government and the Temperance Colonization Company, together with correspondence of settlers, employees and members of the Company, relative to the operations of the said company. Presented to the House of Commons, 16th May, 1890.—*Mr. Wallace*..... ...*Not printed.*

83. Return to an order of the House of Commons, dated 10th March, 1890, for copies of all petitions and correspondence respecting the placing of a floating light opposite Yamachiche, in Lake St. Peter, River St. Lawrence. Presented to the House of Commons, 16th April, 1890—*Mr. Rinfret.* *Not printed.*

83*a*. Return to an order of the House of Commons, dated 19th March, 1890, for copies of all petitions, correspondence and documents whatsoever respecting the placing of a floating light on the St. Lawrence opposite the church of Ste. Croix, in the county of Lotbinière, in place of the buoy now located there. Presented to the House of Commons, 25th April, 1890.—*Mr. Rinfret* .....*Not printed.*

84. Report of Collingwood Schreiber, Esq., Chief Engineer and General Manager of Government Railways, on the completion of the location survey of the proposed line of railway between Harvey Station on the New Brunswick Railway, and a point on the Intercolonial Railway near Moncton *viâ* Fredericton, known as the "Harvey-Moncton Section of the Short Line Railway." Presented to the House of Commons, 24th April, 1890, by Sir John Macdonald .....*Not printed.*

85. Return to an order of the House of Commons, dated 10th March, 1890, for copies of forms of advertisement and of tender, of tenders received of the contract entered into in connection with a steam service between any ports in the Maritime Provinces and any West India ports; also all correspondence connected therewith between any of the public departments and any persons interested in the establishment of the said service. Presented to the House of Commons, 29th April, 1890—*Mr. Trow*..... ..... *Not printed.*

86. Return to an order of the House of Commons, dated 24th January, 1890, for a return of all papers and correspondence between the Ontario Manufacturers' Association and the Dominion Government, during the years 1883, 1884 and 1885, on the subject of proposed legislation relating to factories. Presented to the House of Commons, 1st May, 1890.—*Mr. Edgar*.....*Not printed.*

87. Return to an order of the House of Commons, dated 30th January, 1890, for copy of report made and evidence taken by the court of enquiry ordered by the Department of Marine to investigate the loss of the steamer "Quinté," which was burned on Bay of Quinté in the autumn of 1889. Presented to the House of Commons, 2nd May, 1890.—*Mr. Platt*..... .....*Printed for Sessional Papers only.*

87*a*. Return to an order of the House of Commons, dated 5th March, 1890, for a return of all claims made by the Government since Confederation against individuals, companies or corporations for damages done to Government property by steamers, vessels or other craft; giving the names of vessels, etc., their owners, dates and items of each claim, distinguishing those paid and unpaid. Presented to the House of Commons, 2nd May, 1890.—*Mr. Cook*. .....*Not printed.*

87*b*. Report of Lieut. Gordon, R.N., into the conduct of the master and mate of the steamship "Baltic," in connection with the outrage perpetrated on one Charles Hambly, a deck-hand of the said vessel, on the 26th August, 1889. Presented to the House of Commons, 14th May, 1890, by Hon. Mr. Colby..... ....*Printed for Sessional Papers only.*

87*c*. Return (*in part*) to an order of the House of Commons, dated 5th March, 1890, for a return of all claims made by the Government since Confederation against individuals, companies or corporations for damages done to Government property by steamers, vessels or other craft; giving the names of vessels, etc., their owners, dates and items of each claim, distinguishing those paid and unpaid. Presented to the House of Commons, 16th May, 1890.—*Mr. Cook*.....*Not printed.*

88. Return to an order of the House of Commons, dated 14th April, 1890, for copies of all agreements made between the Government, or the Minister of Railways, and the Western Union Telegraph Company, respecting the construction and operation of a telegraph line along the Cape Breton Railway. Presented to the House of Commons, 2nd May, 1890.—*Mr. Macdonald (Victoria)*— *Not printed.*

89. Return to an order of the House of Commons, dated 14th April, 1890, for copies of the petitions, letters, and the plans and engineers' reports respecting the projected dam at Hungry Bay, in the county of Beauharnois. Presented to the House of Commons, 2nd May, 1890.—*Mr. Bergeron*— *Not printed.*

90. Return to an order of the House of Commons, dated 21st April, 1890, for copies of all petitions and other documents relating to the building of the proposed branch railway to Matane. Presented to the House of Commons, 2nd May, 1890.—*Mr. Fiset*.....*Not printed.*

91. Liquor License Act, 1883, memorandum of claims for fines, costs, &c., imposed on holders of Dominion Licenses for violations of the Provincial License Act. Presented to the House of Commons, 5th May, 1890, by Hon. J. Costigan.....*Printed for Sessional Papers only.*

91*a*. Return to an order of the House of Commons, dated 10th March, 1890: 1. For a return, in detail, of all expenses attending the passage and enforcement of the Liquor License Act of 1883 up to date. 2. The amount of all law costs *re* its constitutionality. 3. The names of all the legal firm or firms employed by the Government, and the amount paid said firm or firms. Presented to the House of Commons, 16th May, 1890.—*Mr. Trow*.....*Not printed.*

92. Return to an order of the House of Commons, dated 14th April, 1890, for copies of all correspondence between the Department of Militia and Defence and the officers of the staff of Military District No. 1 regarding the pay and allowances of said officers. Presented to the House of Commons, 6th May, 1890—*Mr. Scriver*.....*Not printed.*

92*a*. Return to an address of the House of Commons to His Excellency the Governor General, dated 21st April, 1890, for copies of all Orders in Council making appointments, promotions and changes in the Department of Militia and Defence, for the year ending 31st December, 1889. Presented to the House of Commons, 6th May, 1890.—*Mr. Lister*.....*Not printed.*

93. Return to an order of the House of Commons, dated 21st April, 1890, for a return of the quantity and value of eggs imported into and exported from the provinces of Ontario and Quebec since 1st January last; also the countries they have been imported from and exported to. Presented to the House of Commons, 6th May, 1890—*Mr. Guillet*.....*Printed for Sessional Papers only.*

94. Correspondence respecting the surrender of the Anderson contract for the Atlantic Steamship Service. Presented to the House of Commons, 13th May, 1890, by Hon. G. E. Foster—
Printed for Sessional Papers only.

95. Return to an order of the House of Commons, dated 24th January, 1890, for a return showing the total amount of expenditure to date on the Government Printing Bureau building, the total expenditure to date on type, presses and all other printing and binding machinery and material placed in the bureau; also the total amount paid in salaries and wages to officers and employees in the bureau from the 1st July, 1889, to 1st January, 1890. Presented to the House of Commons, 14th May, 1890.—*Mr. Innes*.....*Printed for Sessional Papers only.*

96. Return (in part) to an order of the House of Commons, dated 23rd January, 1890, for a return showing the amount of money expended by the Dominion in each province since Confederation to the 30th of June, 1889, under the following heads: 1. Subsidies to railways in each province, excepting the Canada Pacific main line and Sault branch; 2. The several railways built by the Dominion in each Province, including the Intercolonial branches and extensions, but not the main line as originally constructed; 3. The buildings erected or purchased in each province, their location and cost. Presented to the House of Commons, 7th May, 1890.—*Mr. McMullen*—
Printed for both Distribution and Sessional Papers.

97. Return to an order of the House of Commons, dated 31st March, 1890, for a statement showing the number of barrels of Canadian flour brought by sea or directly, or through the United States of America, into the several provinces of Nova Scotia, New Brunswick and Prince Edward Island, during the year 1889. Presented to the House of Commons, 16th May, 1890.—*Mr. Weldon (St. John)*.....*Not printed.*

98. Return to an order of the House of Commons, dated 12th February, 1890, for a return showing the names of the six Pagans returned for the parish of Ste. Elizabeth, in the county of Joliette and province of Quebec, in the census returns of 1881, as appears from the original schedule of the enumerator for that parish. Presented to the House of Commons, 16th May, 1890.—*Mr. Charlton.*
Not printed.

99. Return to an order of the House of Commons, dated 10th March, 1890, for copies of all papers connected with the seizure of the tug "Rooth" at Amherstburg, in July or August last, having a raft in tow, and bound from French River to Fort Erie. Presented to the House of Commons, 16th May, 1890.—*Mr. Charlton*.....*Not printed.*

100. General statements and returns of baptisms, marriages and burials in the districts of Chicoutimi, Gaspé, Joliette and Montmagny, for the year 1889. Presented to the House of Commons, 16th May, 1890, by Hon. Mr. Speaker.....*Not printed.*

101. Return to an address of the Senate to His Excellency the Governor General, dated 22nd April, 1890, for copies of all correspondence between the Minister or Deputy Minister of Justice, Inspector Moylan, or any official in connection with the Department of Justice, and the Warden, Deputy Warden, or any other official of the British Columbia Penitentiary, relating to the dismissal of John Wiggins, lately a guard in the aforesaid penitentiary. Presented to the Senate, 16th May, 1890.—*Hon. Mr. McInnes (New Westminster)*.....*Not printed.*

TWENTY-SECOND ANNUAL REPORT

OF THE

DEPARTMENT OF MARINE

FOR THE

FISCAL YEAR ENDED 30th JUNE,

1889.

PRINTED BY ORDER OF PARLIAMENT.

OTTAWA:
PRINTED BY BROWN CHAMBERLIN, PRINTER TO THE QUEEN'S MOST EXCELLENT MAJESTY.

1890.

To His Excellency the Right Honourable Lord Stanley of Preston, Governor General of Canada, &c., &c.

MAY IT PLEASE YOUR EXCELLENCY:

I have the honour to submit herewith, for the information of Your Excellency and the Legislature of Canada, the Twenty-second Annual Report of the Department of Marine.

I have the honour to be,
Your Excellency's most obedient servant,

CHARLES H. TUPPER,
Minister of Marine and Fisheries.

DEPARTMENT OF MARINE,
OTTAWA,

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REPORT

OF THE

DEPUTY MINISTER.

To the Honorable

CHARLES H. TUPPER,

Minister of Marine and Fisheries :

SIR,—I have the honor to report on the transactions of this Department for the fiscal year ended the 30th June last, and to give an account of a considerable portion of the business up to 1st December, 1889.

A supplement will be issued to this report, comprising returns from the Chairmen of the Boards of Steamboat Inspection, and of Examiners of Masters and Mates; the reports of the Toronto, Montreal, Quebec and Pictou Harbour Commissioners, the Pilotage Authorities, the Harbour Masters, the Port Wardens and the Harbour Police of Montreal and Quebec, together with statements of wrecks and casualties, and list of rewards for saving life.

The total amount expended on the various branches of the public service administered by this Department, including the salaries of the establishment staff, during the fiscal year ended 30th June last, was $1,023,801.34, while the total amount voted was $1,169,377.21 which last named amount includes the departmental salaries.

The whole number of persons engaged in the outside service of the Department at the close of the calendar year was 1379.

The lighthouse service of the Dominion is divided as follows, viz.:—The Ontario Division, embracing lights above Montreal; the Quebec Division, extending below Montreal and including the River and Gulf of St. Lawrence and the Strait of Belle Isle; the Nova Scotia Division, including Cape Race, Newfoundland; the New Brunswick Division; the Prince Edward Island Division and the British Columbia Division. The total number of light stations in the Dominion on the 1st December, 1889, was 579, and of lights shown 675; the number of steam fog-whistles and automatic fog-horns 53, and the number of light-keepers, engineers of fog-whistles and other assistants, with crews of lightships, was 735.

The following is the number of lights shown, of fog-whistles and automatic fog-horns in the several Provinces of the Dominion on the 31st December of each year, from 1868 to 1889, inclusive.

In these numbers are the light stations on the coasts of Newfoundland maintained by the Dominion.

	Light Stations.	Light-houses.	Fog Whistles.	Automatic Fog Horns.
December 31, 1868	198	227	2	.....
do 31, 1869	219	233	2	.....
do 31, 1870	240	278	4	.....
do 31, 1871	264	297	8	.....
do 31, 1872	280	314	13	.....
do 31, 1873	316	363	17	.....
do 31, 1874	342	384	18	.....
do 31, 1875	377	444	22	.....
do 32, 1876	407	488	24	.....
do 31, 1877	416	509	25	2
do 34, 1878	427	518	25	4
do 31, 1879	443	542	23	6
do 31, 1880	452	551	22	7
do 31, 1881	462	553	23	9
do 31, 1882	470	562	23	9
do 31, 1883	484	578	23	9
do 31, 1884	507	597	23	10
do 31, 1885	526	617	23	12
do 31, 1886	534	625	23	16
do 31, 1887	561	658	23	24
do 31, 1888	569	664	23	27
do 31, 1889	579	675	24	29

ONTARIO LIGHTHOUSE DIVISION.

This division includes the lighthouses and lightships in that part of the Province of Quebec lying west of Montreal, as also all the lights in the Province of Ontario, embracing the lights on the Ottawa River, the St. Lawrence River above Montreal, the great lakes, some of the smaller inland lakes, and a lighthouse and lightship on Lake Winnipeg, in the Province of Manitoba.

The number of lights in the Ontario Division, inclusive of the two in Manitoba, is 190. This number comprises lighthouses, light-beacons and lightships maintained by the Dominion. There are also 275 buoys and 20 beacons.

The number of light-keepers in this division paid directly by the Government is 152, but in several cases assistants are employed by keepers and paid by them out of the allowance made by the Government for that purpose.

The lights in this division, with the exception of those on the Ottawa River and small lakes, were inspected during the months of July and August by Mr. Patrick Harty, Superintendent of Lights, and supplied with the necessary stores, the steamer "Canada" having been chartered for the purpose, for the sum of $3,100.

The following work in respect of lighthouse construction and important repairs has been carried out during the past season in the Ontario Division :

The back range-light tower, Kingsville, Lake Erie, in the South Riding of Essex, referred to in last year's report, was constructed under the supervision of Mr. W. H. Noble, foreman of works, at a total cost of $370.61. The light was put in operation at the opening of navigation this year, and is a fixed, bright light, elevated 55 feet above the level of the lake, and visible 12 miles from all points

seaward. The illuminating apparatus is dioptric, of small size. The tower is a square wooden building, painted white, surmounted by an iron lantern, painted red; its height from the ground to the vane on the lantern is 29 feet.

On the establishment of this light, one previously shown from the front window of Capt. W. J. Malotte's dwelling was discontinued. The new light is used in conjuntion with the front range light, on the outer end of the eastern breakwater pier.

A contract was awarded to Mr. Charles Mickler, of Collingwood, for the sum of $1,515, for the construction of the range lights required at Point-au-Baril, on the Georgian Bay, in the District of Parry Sound, and the work was satisfactorily completed and the lights put in operation on the 10th October last. The total expenditure in connection with these range lights has been $2,260.37.

The outer or front range light building stands upon the southern extremity of Point-au-Baril, close to the water, and consist, of a square wooden tower with kitchen attached. The tower is 32 feet high from the ground to the vane on the lantern. The building is painted white. The light is fixed white, elevated 38 feet above the level of the bay, and is visible 10 miles from all points seaward. The illuminating apparatus is dioptric.

The back range light building stands upon the summit of an island distant 4,800 feet, E. by S. $\frac{3}{4}$ S., from the front one. The tower is a square open frame, surmounted by an enclosed frame and lantern, the frame painted brown, and the enclosed portion white. The building is 44 feet high from the base to the vane on the lantern.

The two lights, in range, lead through the channel, the outer light being left on the port hand in entering.

A contract was awarded to Mr. John George, of Port Elgin, for the erection of a lighthouse and necessary buildings at Gargantua Harbor, Lake Superior, for $2,999, and the work was satisfactorily completed, and the light put in operation during the past autumn. The total cost of this light has been $3,750.97.

The tower stands on the summit of a small island in the mouth of the harbor, and is a wooden, hexagonal building, 43 feet high from the rock to the vane on the lantern, painted white, with the iron lantern surmounting it painted red.

The dwelling is located on the main land on the north side of the harbor, in a sheltered position.

The light is fixed white, elevated about 97 feet above the level of the lake, and should be visible, from all points seaward, 15 miles. The illuminating apparatus is dioptric of small size.

The storm of the 9th January last did considerable damage to the base of the main light at Port Colborne, and also to the breakwater pier on which it stands, carrying away with the upper courses of the timber work the greater part of the elevated walk leading to the tower to enable the lightkeeper to go to the tower in stormy weather.

A contract has been let to Messrs. Dickinson and Suess for the sum of $1,385 to replace the elevated walk, with wrought iron, instead of wooden, bents. An examination of the tower shows that its base and the cribwork under it are very seriously decayed, and it is proposed, as soon as the weather will permit next spring, to take

down the lighthouse tower and rebuild the end of the pier from the water level, and to re-erect the tower using new materials where necessary. This work will be executed under the direct supervision of the Department.

Tenders have been invited for the erection of two range light buildings at Corunna, on the St. Clair River, in the West Riding of Lambton, Ont., to guide past the head of Stag Island. The lights will probably be ready to put in operation on the opening of navigation next year.

The light at Buckom's Point, on the River Ottawa, above Ottawa city, has been removed to a pier, standing about 500 feet out in the water. The necessary pier and the new tower surmounting it were erected under contract by the light-keeper, Mr. Godfroi Ouellette, at a total cost of $573.45.

This Department has promised to furnish illuminating apparatus and oil to the Newcastle harbor authorities, on the north shore of Lake Ontario, with the understanding that a light is to be maintained in a building erected by those authorities on the outer end of the breakwater pier. This light will probably be put in operation on the opening of navigation next year, and will replace a small temporary light heretofore maintained by the harbor authorities. The light will be fixed white, and the illuminating apparatus dioptric, of small size.

During the past season the crib on which the lighthouse on Point Pelée Reef, Lake Erie, stands, commonly know as the "Dummy" was stripped of its wooden walls down to the water's edge, the timber being replaced by a casing of steel plate, solidly filled with cement concrete to a height of 11 feet above the water level, the steel shell being continued to a further height of 11 feet on five sides and 7 on the other three to protect the base of the tower from the waves. This change makes the pier a most substantial structure, and should obviate the frequent heavy expeditures heretofore necessitated for repairs to the woodwork.

At the same time, a fog alarm operated by steam and compressed air was established at this station, the horn projecting horizontally from the south-east face of the octagonal pier at a height of 20 feet above the lake. The alarm was put in operation for the first time on the 25th November last, and sounds blasts of 7 seconds' duration, with intervals of 45 seconds between them.

The total expenditure in connection with the repairs and establishment of the fog-horn has been $7,261.22.

It is also proposed to improve the light at this station next season, by erecting a new lantern of modern pattern, at a probable cost of $1,400.

Plans have been prepared for two range light buildings to guide into the entrance of Byng Inlet more accurately than could be done by the single light heretofore maintained there. The line of range was laid down by Staff-Commander Boulton, R.N., after a thorough survey of the channel, and leads through good water, clear of all outlying dangers. A contract for this work has been let to Mr. Charles L. White, of Parry Sound, for the sum of $895, and the lights are to be ready to be put in operation on the opening of navigation next year. The old light will still be maintained as a coast light.

The repairs to the Port Maitland light station, referred to in last year's report, were duly completed by the Department of Railways and Canals, at a total cost of $1,378.20.

An arrangement has been made with the municipal authorities of Goderich, Ont., by which a steam fog-whistle has been established in connection with the town waterworks machinery, this department providing the whistle and automatic machinery to regulate it, and the town furnishing the steam power and attendance. The whistle was put in operation on the 10th November last and gives blasts of 10 seconds' duration, with intervals of 50 seconds between them.

The water works building is situated on the beach of the harbour, south of the breakwaters, and about 1,200 feet S. E. by E. from the outer end of the north breakwater pier. It is of red brick, with an unpainted shingle roof, and a high brick chimney rising on the lake side of it. It is partially hidden from the lake by an old wooden storehouse. The 8-inch whistle, rising from the roof, stands 30 feet above the level of the lake.

Mr. Henry Wood, lightkeeper at Point aux Pins, has been instructed to maintain a light from a lantern hoisted on a pole at Foote's Dock, on the St. Mary River, above Sault Ste. Marie. This light, it is expected, will prove a valuable aid to the difficult navigation of the river at this point.

In consequence of the dangerous nature of the coast in that vicinity, it has been decided to establish a steam fog-horn at the Point Peter light station, on the south shore of the County of Prince Edward, on Lake Ontario, and a contract has been awarded to Mr. J. C. Innes, of Kingston, for $1,010, for the necessary building. It is expected that the alarm will be ready to be put in operation soon after the opening of navigation in 1890.

Plans have been prepared and tenders will shortly be invited for the erection of a lighthouse on the north point of the Centre Brother Island, on the north Shore of Lake Ontario, in the County of Lennox. This light, it is expected, will be of great benefit to the constantly increasing traffic between Kingston and the Bay of Quinté and will also enable vessels to use the inside passage in heavy weather.

It is proposed during the present winter to invite tenders for a lighthouse on Narrow Island, on the north coast of Manitoulin Island, in the north channel of Lake Huron, Algoma, and to establish a pole light on the dock at Tolsmaville, Cockburn Island, in the same district, on the opening of navigation next year.

Previous to the opening of navigation this year the back range tower at Weller's Bay, in the County of Prince Edward, was moved 37 feet eastwardly, so as to bring the two lights in line with the extremity of the spit off Bald Head, for the purpose of making the alignment show the best water over Weller's Bar, which lies about 3,300 feet outside of Bald Head spit. On the spit a whitewashed tripod 16 feet high was also erected, to more exactly mark its extremity.

The character of the light on Mohawk Island, Lake Erie, was, on the opening of navigation this year, changed from a revolving white light every 3 minutes to a group flashing white light, showing three bright flashes with intervals of 30 seconds between their points of greatest brilliancy, followed by an eclipse of 75 seconds, a complete revolution thus occuping $2\frac{1}{4}$ minutes. This change makes the light much more distinctive as well as more effective than it previously was.

At the same, time a red sector was added to the light at Nottawasaga Island, in the Georgian Bay, for the purpose of defining the outer edge of the shoals

extending between the light and the harbor. The sector covers an arc of 30 degrees, from Fisherman's Point south-westwardly, and vessels making Collingwood from the north-westward should keep north of the red sector, with the white light in sight, until the breakwater light bears S. W., when it should be steered for on that bearing.

During the past season two automatic bell buoys have been established, the one near the mouth of the Niagara River, in Lake Ontario; the other on Lone Rock, at the entrance to the Waubuno Channel, in the Georgian Bay.

The former is painted red, and has been moored in 20 feet off the west side of the mouth of the river, distant 2 miles and 3 cables, N. W. by N. $\frac{1}{2}$ N., from the American light at Fort Niagara, replacing a spar buoy.

In consequence of its establishment the fog-bell rung by machinery which was maintained on the north rampart of Fort Mississauga on the west side of the mouth of the river has been discontinued, and the bell and machinery will be sent to British Columbia to be utilized at the First Narrows of Burrard Inlet.

The Lone Rock buoy is also red, moored in 48 feet water, 300 feet from the rock, and replaces a barrel buoy. It must be kept on the starboard hand in going up the bay to the northward.

These two buoys, which are of the "Brown Patent" pattern, were purchased from A. Brotherhood, of New York, and cost $755 each. Contracts have been entered into for placing them in the spring, removing them in the fall and caring for them generally for a term of three years at a cost for the Niagara buoy of $75 per annum and of $125 per annum for the Lone Rock buoy.

Besides the more important repairs above mentioned, the ordinary minor repairs and annual painting requisite to maintain the efficiency of the service were carried out as usual.

The total cost of maintaining the lights, light vessels, fog-bells, buoys and beacons in this division, including the Manitoba lights and lightship, and Rainy River light for the last fiscal year, was $72,621.23, and the expenditure for construction of lights, for the same period, was $8,638.76.

QUEBEC LIGHTHOUSE DIVISION.

This division comprises the lighthouses and lightships below Montreal, on the River St. Lawrence, and on the Richelieu River and Lake Memphremagog, as well as all the lighthouses, lightships, steam fog-whistles, gas, bell and other buoys and beacons in the River and Gulf of St. Lawrence, within the limits of the Province of Quebec, and on the north-west coast of Newfoundland and the Labrador coast. This division is under the charge of Mr. J. U. Gregory, Agent of the Department at Quebec, who also has under his superintendence the Dominion Steamers "Napoleon III" and "Druid," as well as the Quebec River Police Force.

At the close of navigation there were in this division 151 fixed and revolving lights; 8 lightships, 3 of which are supplied with steam fog-whistles; 8 fog guns; 10 steam fog-whistles or fog-horns; 112 buoys, 8 of which are gas buoys; 59 beacons and 9 life-saving canoes for service in the ice.

The Steamer "Druid" after being repaired and put in good condition was employed during past season in attending to the gas and other buoys, and in sup-

plying lights in the river. The lights in the Gulf of St. Lawrence, Strait of Belle Isle and Baie des Chaleurs, and some of the lights in the river, were supplied by the "Napoleon III," several trips being made for this purpose.

All the light and fog-alarm stations were visited and reported on by Mr. J. G. Bruneau, one of the officers of the agency at Quebec, and several of the more important stations were also visited by the Agent.

During the past season the front range light building at St. Valentine, on the Richelieu River, in the County of St. John's, which was moved out of position by ice in the spring of 1888, was moved back a distance of 2 feet 3 inches southerly, so that the two lights in range now indicate the middle of the channel in the narrow crossing at that point.

This building consists of an octagonal wooden lantern, painted white, standing on a small cribwork pier 125 feet outside the shore line on the west side of the river, about half a mile below Isle aux Noix. The lantern is 12 feet in height from the pier to the vane on its top. The light is fixed white, elevated 8 feet above the ordinary level of the river, and is visible in the line of range and for two miles down the river. The illuminating apparatus is catoptric.

The back range light tower, is a square wooden building, standing on the shore 345 feet from the front light. It is painted white, and is 24 feet high from the ground to the vane on the lantern. The fixed white catoptric light is elevated 23 feet above the ordinary level of the water and shows in the line of range across the river.

In consequence of complaints that the range lights on the Richelieu Company's wharf at Sorel were misleading to heavy draft steamers, two day beacons have been erected to mark the centre line of the ship channel at the entrance to the River Richelieu at Sorel, on the River St. Lawrence above Quebec. The front beacon stands close to the shore of the point on the west side of the River Richelieu, about the middle of the approach to the Montreal and Sorel Railway wharf. It consists of a diamond-shaped frame structure, 8 feet square, painted white, with a black diamond in the middle, the apex elevated 34 feet above low water mark.

The back beacon is located 875 feet from the front one, near the upper end of the building occupied as a store in the shipyard of the Department of Public Works. It is of the same type and colors as the front one, but 10 feet square, with its apex 48 feet above low water mark.

The least depth of water in the alignment is 24 feet.

The iron lightship which was sunk in 1887 at the lower end of the Traverse opposite St. Roch des Aulnaies, Rive rSt. Lawrence, was successfully raised, and after being repaired, resumed her station on the 8th July last, replacing the wooden vessel temporarily substituted for her.

The illuminating apparatus is dioptric, and consists of three fixed lights, arranged as follows: A white light at an elevation of 31 feet on the main masthead; a white light at an elevation of 25 feet above the water on the foremast head, and a red light on a stay between the two masts, at an elevation of 49 feet above the water. These lights should be visible 9 miles in all directions.

The hull of the vessel is painted red, with the words "Lower Traverse" in white letters on each top side. A red ball is hoisted on the main mast in day time; if the vessel moves from her station the ball or main mast light will not be shown.

During the continuance of thick weather a steam fog-whistle on the ship gives blasts of 12 seconds' duration, with intervals of 48 seconds between the blasts.

It was deemed advisable in July last to give directions that the fog-gun at the Father Point light station, on the south shore of the River St. Lawrence, in the County of Rimouski, which had hitherto been fired only in answer to steamers' signals for pilots, should be fired every half hour during thick weather, and also in response to signals, if made between regular intervals for firing.

The range lights at Oak Point, on the Restigouche River, in the County of Bonaventure, being no longer required for navigation, it was decided to discontinue them from 1st November last.

The steamship "Montreal," of the Dominion Line, was unfortunately lost on Belle Isle, Strait of Belle Isle, in August last,-during a thick fog, and it was deemed advisable in the interests of the shipping traffic between the St. Lawrence and Europe *via* the Strait of Belle Isle to make arrangements for the erection of a steam fog-horn at Cape Norman on the Newfoundland coast of the strait. An effort was made to establish this fog-horn in the latter part of the season, but it was found too late to perfect the arrangements and the horn cannot be put in operation till next season.

During the past season a wooden can buoy was established off Alcide Rock, south-west from Bic Island, in the Lower St. Lawrence. The buoy is moored in 9 fathoms, to the northward of the rock, and is in the line of the two white beacons erected on the south shore, with the white diamond beacon on the west end of Bic Island just open to the northward of the white cross beacon on the same island.

The back tower of the lower range at Isle Ste. Thérèse was totally destroyed by fire on the 24th August last, owing to one of the lamps exploding. A temporary light on a pole was immediately established, and tenders invited for a new building. The contract was awarded to Messrs. Rousson Bros., of Williamstown, Ont., for $820, and the building has lately been satisfactorily completed.

The following is a synopsis of the principal repairs and improvements made at the lighthouse stations in this division during the past season, exclusive of the ordinary painting, which was done wherever required :—

Amherst Island.

Mammoth flat wick lamps replace the circular wick lamps, and the interior of the dwelling has been repaired.

Bird Rocks.

The dwelling clapboarded and the interior thoroughly repaired, and a wharf built at the landing.

Bicquet.

At the opening of navigation last spring the fog gun at this station was discontinued and a steam fog-horn established in its place.

Cape Bauld.

A large crane erected at the landing.

Entry Island.

The canvas on lantern gallery renewed, and the circular lamps replaced by mammoth flat wick lamps.

Etang du Nord.

One of the boilers of the fog-whistle was brought up to Quebec for repairs.

Isle aux Raisins Range.

A new pier was built under the front range tower, the contract price for which was $1,660, and the lantern of the back range light was re-covered with metal.

Kamouraska.

The interior of the tower was wainscotted and other repairs made to the dwelling and roofs, and the circular wick lamps were replaced by mammoth flat wick lamps.

Lark Islet.

A duplicate fog-horn was placed at this station in case the original horn becomes unserviceable.

Lake St. Peter Lightship, No. 3.

The light was improved by substituting a Chance anchor light lamp and Hinks' duplex burners for the naked mammoth circular wick lamp formerly in use.

Lavaltrie.

A new tower with a set of new lamps was erected to replace the back range building carried away by the ice last fall.

Perroquet Island.

Material for the construction of a store house was delivered at this station.

South Point Anticosti.

Storm shutters and doors were supplied for the dwelling and fog-alarm building.

St. Antoine.

The light at this station being obstructed by trees, a Chance anchor light was placed 10 feet above the old light, and this arrangement has proved satisfactory.

Seven Islands.

A store house 20 x 18 feet, was erected at the northern end of the Island.

In addition to the repairs specified above, the lights at Brandy Pots, Cape Despair, Cape Gaspé, Cape Norman, Father Point, Greenly Island, Isle de Grâce, Matane, St. Antoine, Montée du Lac and St. Croix have been improved during the past year by substituting new and improved lamps for those in use.

Several of the day beacons on the coasts of the River and Gulf of St. Lawrence were either repaired or renewed during the past season.

An appropriation of $10,000 was made by Parliament at its last Session, towards the erection of a suitable pier, with lighthouse thereon, at the Lower Traverse in the St. Lawrence, and plans for this work are in course of preparation.

The total amount expended for the maintenance of lights, lightships, provision depôts, buoys, beacons and fog-whistles in this division during the year ended 30th June last amounted to $124,965.99, and the amount expended during the same period for construction of lights was $12,203.06.

NOVA SCOTIA LIGHTHOUSE DIVISION.

This division, in charge of Mr. H. W. Johnston, Agent of the Department for the Province, includes at this date 163 lighthouses, exhibiting 170 lights, 1 light-vessel, 14 steam fog-alarms, 2 fog-bells, 3 signal gun stations, 10 automatic signal buoys, 6 iron bell buoys, 98 iron can buoys, about 625 spar and other small buoys, 8 stationary beacons, 13 life-boat stations, 3 humane establishments, and 3 signal stations.

The lighthouses, fog-alarms and life-saving stations were inspected by Mr. C. A. Hutchins, Superintendent of Lights for the Nova Scotia district. Mr. Warner, engineer of the "Newfield," also examined the boilers and machinery, when opportunity occurred.

Three new lights have been erected during the past year ; one is in course of construction, and two new fog-alarms have been established.

New Lights Completed This Year.

Campbell's Island.

A beacon light has been built on the eastern side of Campbell's Island, at the western side of the entrance to McKinnon's Harbour, in the Great Bras D'Or Lake, Inverness County, Cape Breton, and was put in operation at the opening of navigation last spring.

The light, which is fixed white, is shown from a small lenticular lantern hoisted on a mast, and is elevated 30 feet above high water mark. The mast has a small wooden building at its base, and there is also a small wooden cabin for accommodation of the keeper about 30 feet from the mast. The work was done under contract by Mr. T. D. McDonnell, of Judique, C.B.

Brooklyn Pier.

In consequence of the partial destruction by the sea of the breakwater at Brooklyn, Nova Scotia, it was found necessary in 1885 to temporarily discontinue the light shown from the tower erected in 1878 on the outer end of the pier, and to remove the building.

The superstructure of the pier, for a distance of about 480 feet at the outer end, having since been entirely caried away, the substructure and stone ballast, which for the greater part of the distance are covered at all stages of the tide, now remain as a dangerous obstruction to navigation.

A pole light was consequently established as near the outer end of the substantial remaining portion of the pier as possible, and put in operation on the 15th January last.

The light is fixed green, shown from a small lenticular lantern hoisted on a pole, elevated about 30 feet from the shore and 500 feet from the submerged extremity of the pier.

As an additional safe guard, an iron can buoy, painted red, has been moored off the outer end of the sunken pier.

Belliveau Cove.

A square wooden tower, painted white, has been erected on the outer end of the eastern pier at Belliveau Cove, on the southern shore of St. Mary's Bay, in the County of Digby, and was put in operation on the 1st day of March last.

The light is fixed green, elevated 24 feet above high water mark, and should be visible 4 miles from all points seaward. The illuminating apparatus is dioptric, of small size.

Cape St. Lawrence.

The lighthouse erected on Cape St. Lawrence, in the County of Inverness, near the north extremity of the Island of Cape Breton, was put in operation on the first day of June last.

Two fixed white lights are shown from the tower, at a distance of 42 feet apart vertically. The upper light in the lantern is elevated 137 feet above high water mark, and should be visible 17 miles.

The lower light is shown from a bay window on the lower floor of the tower, elevated 95 feet above high water mark, and is visible 15 miles.

Owing to an accident which occurred last spring when landing the illuminating apparatus, the lights now shown are only of a temporary character, and will be replaced on the opening of navigation by more powerful illuminating apparatus obtained from Messrs. Chance, Brothers & Co., the celebrated English lighthouse engineers.

The main building consists of a square wooden tower, 56 feet high from the base to the vane, with keeper's dwelling attached. It is painted white, and the iron lantern which surmounts the tower is red.

Annapolis Light.

A beacon light established in the town of Annapolis was put in operation on the 30th July last.

The light is fixed red, elevated 30 feet above high water mark, and should be visible a distance of 7 miles from all points seaward. The illuminating apparatus is dioptric, of small size.

The tower is a square wooden building, painted white, and is 28 feet high from the base to the vane. It stands near the water's edge, upon a piece of land known as the Engineers' Lot, situate a short distance north-easterly of the old Government pier.

The work was done under contract by Mr. Rufus Hardwick. of Annapolis, for the sum of $295, and the lot was subsequently enclosed by a neat fence.

The light is intended for the guidance of vessels navigating the Annapolis River between Goat Island and Annapolis.

Cold Spring Head.

A small tower has been erected on Cold Spring Head, on the southern shore of Bay Verte, in the County of Cumberland.

The height of tower is 35 feet from base to vane. The illuminating apparatus is dioptric, showing a fixed white light, elevated 60 feet above high water mark. The work was done under contract by Mr. J. H. Brownell, of Northport, for the sum of $894.

The light will be put in operation on the opening of navigation next spring.

CHANGES MADE IN CHARACTER AND LOCATION OF LIGHTS AND FOG-ALARMS.

Little Hope Light.

A new 10½ foot iron lantern, fitted with revolving machinery, and new lamps and reflectors, have been supplied to this station, and the light changed to a revolving white light, showing three flashes, with intervals of ten seconds between their points of greatest brilliancy, followed by an interval of thirty seconds, during the greater part of which interval the light will be totally eclipsed, the light thus completing a revolution in 50 seconds. A new lantern deck was also built on the lighthouse. The cost of these improvements amounted to $3,177.66.

Pubnico.

An addition of 10 feet in height was made to the tower at this station and the structure was surmounted by an iron lantern, formerly in use at Peggy's Point, and a No. 6 dioptric apparatus supplied. These changes have greatly improved the character of the light.

Meagher's Beach Fog-Alarm.

The fog-bell heretofore maintained at this station being considered insufficient, it was decided to remove it to George's Island and replace it with a Neptune fog-trumpet operated by steam and compressed air. This change has been carried out and the fog-trumpet put in operation on the 1st April last.

George's Island Fog-Bell.

The fog-bell removed from Meagher's Beach was erected on the western side of the light-house on George's Island and put in operation on the 1st day of April.

Apple River Fog-Alarm.

The fog-horn which it was proposed to establish at the light station at Cape Capston, on Hetty Point, on the northern side of the entrance to Apple River, Bay of Fundy, in Cumberland County, has been duly established and put in operation.

The fog alarm building stands immediately to the eastward of the lighthouse, &c., and is a one-story wooden building. painted white, with the roof brown.

The fog-horn is operated by compressed air, and sounds blasts of fourteen seconds, duration. with intervals of forty-six seconds between them.

Digby Fog-Alarm.

In consequence of the great expense involved in carting coal from the nearest landing place, inside the Gut, and the unsatisfactory results from the whistle in its former position, owing to the intervention of the lighthouse and high grounds between the whistle and the Bay, it was decided to remove the whistle house to a site near the edge of the cliff, which would avoid the interruption to the sound and enable vessels to deliver coals directly into the coal shed. It was further decided, on account of the age of the boiler, to furnish a new boiler and to repair the old one, and set both up furnished with a Crosby patent automatic attachment. These changes have been almost completed. A new reservoir has been built at the station and a derrick fitted with a steam winch erected alongside the coal shed. The change has resulted in a great improvement in the sound of the whistle.

Repairs to Fog Alarms.

Scatterie.

Boilers and engines repaired and spare whistle supplied.

Sambro.

The boilers at this station have been repaired and considerable repairs made to the tramway and landing.

Cross Island.

Dome of boiler covered with felt and pine sheathing and the machinery repaired.

The following is a statement of repairs and improvements made at the different stations during the past year :—

East of Halifax.

Meagher's Beach.

The breakwater on the southern and western side of the beach has undergone considerable repairs which have been carried out by Mr. Bowser, that on the western side having been strengthened with waling pieces and iron ties binding the two rows of piles together, and the southern side having broken piles and planks removed, new ones substituted, and ballast replaced throughout. Extensive repairs and alterations have been made to the keeper's dwelling and an addition of 14 x 28 feet made to it.

Egg Island.

The landing slip has been repaired and the keeper's dwelling re-shingled, at a cost of $135.

Sheet Rock.

The landing slip has been repaired and a new block built at the end of slip.

Beaver Island.

Landing slip repaired and new platform built for capstan, lantern deck re-covered with canvas, and kitchen pump supplied.

Cranberry Island.

A new boat-house and slip have been built at the landing.

Jerseyman's Island.

An addition of 10 feet has been made to the dwelling, for the accommodation of the keeper's family. The work was done by the keeper, under a contract, for $200.

Ouétique Island.

A small cribwork breakwater has been built, to prevent the road leading from landing to lighthouse from being washed away by the sea.

St. Esprit.

A cribwork block 17 x 12 feet, and 12 feet deep, has been built at the new landing place on the western side of reef. The work was done under contract by the keeper for $150.

WEST OF HALIFAX.

Bon Portage.

The breakwater at landing has been repaired and an addition built thereto, and a boat slip has also been built inside the breakwater, at a cost in all of $237.75.

Argyle.

A new boat-house and slip have been built at this station, and some minor repairs done to dwelling.

Port George.

In consequence of the dangerous condition of the western pier, the lighthouse was moved in to the mainland in February last, and the light discontinued. It was moved back to its position on the eastern pier, and again put in operation on the 19th March last.

Buoy Service.

This important and growing branch of the service has been further extended and improved during the past year.

The following additions have been made during the year :—

North East Harbour, Cape Negro.

Smith's Ledge, a spar buoy.
Bartlett's Ledge, a spar buoy.
White Ledge, a spar buoy.

Annapolis River.

Spurr's Ledge, a wooden can buoy.
Marsh Point, a spar buoy.

The following have been authorized but not yet placed:—

John's Ledge, near Pubnico.

A Trinity bell buoy to replace the iron can buoy at present there.

Pubnico Harbour.

An iron can buoy to replace the spar buoy at present on Pubnico Ledge.

Point Aconi.

An iron can buoy to be moored off the point of shoal.

Clarke's Cove—North Side Entrance to West Bay, Big Bras d'Or Lake, C. B.

Three spars to mark shoals at entrance.

Sable Island.

It has been decided to erect a house for the staff at the main station, and a new dwelling and barn at the east end station.

The west end lighthouse has been painted, and other improvements made at the station.

St. Paul's Island.

During a heavy gale in December last the lower end of boat slip at the main station, to the extent of about 30 feet, was carried away, and a surf boat and two smaller boats destroyed. In July last materials were sent down by the "Newfield" to repair the slip, and the work was done by people on the island under the supervision of the Superintendent. This consisted of the building of a cribwork structure 26 x 23 feet, 2 feet high at the outer end and 6 feet at the inner, covered with 3-inch plank, and ballasted. Three boats, to replace those lost, were built on the island during the winter, at a cost of $120. The large boat is fitted with cork floats, for life-saving purposes. The two smaller boats were for the lighthouses.

The total cost of maintenance of the lights, steam fog-whistles, &c., in the Province of Nova Scotia, including humane establishments at Sable, St. Paul and Scatterie Islands, for the last fiscal year, amounted to $140,197.15, and the amount expended during the same period on construction of lights was $6,039.91.

NEW BRUNSWICK LIGHTHOUSE DIVISION.

This division comprises all the lighthouses, fog-whistles, buoys and beacons on the coasts and rivers of the Province of New Brunswick, and is under the charge of Mr. J. H. Harding, agent of the Department at St. John, N.B. In this division there are 110 lights, 1 lightship and 13 fog-alarms, 486 buoys-including automatic, and 5 beacons. There are 96 keepers of lights and fog-alarms.

The agent reports that shipping disasters are gradually becoming reduced owing to the increased facilities mariners now enjoy of defining their position by means of the numerous lighthouses, fog-alarms and buoys placed along the coasts and harbours.

During the past year two range lights were established on Indian Point, on the south side of Big Shippegan Gully, in the County of Gloucester. The front light is located near the extremity of Indian Point and is fixed red, shown from a lantern hoisted on a mast at an elevation of 28 feet above high water mark, and is

visible in the line of range 4 miles. The mast on which to hoist the lantern has a small shed at its base, and the height from the ground to the top of the mast is 25 feet.

The back light is located 444 feet from the front one, and is fixed white, elevated 39 feet above high water mark, and is visible 11 miles in the line of range. The building is of the same description as that of the front light, the top of the mast being 35 feet above the ground.

The two lights in one indicate the deepest water over the bar, and are intended to guide vessels in making the entrance to Big Shippegan by the Gully.

A beacon light was also established at Anderson's Hollow, Chignecto Channel, in the County of Albert, and put in operation on the first day of August last.

The light is fixed red, elevated 25 feet above high water mark, and visible a distance of 6 miles.

The lighthouse tower is a square wooden building, painted white, with red roof, and is 20 feet high from the wharf to the vane.

The light is intended to guide vessels into the harbour of refuge behind the breakwater. Vessels may run for the harbour one hour before high water, giving the light 50 feet of a berth on the port hand.

A lighthouse has been erected at Fort Folly Point, in the County of Westmoreland, and will be put in operation on the 1st March, 1890.

The work was done under contract by Mr. E. C. Bowser, of Dorchester, for the sum, of $1,875.

Tenders were also invited for the erection of a beacon light at Ward's Point in the County of Westmoreland, and the contract awarded to Mr. George Ingram, of Newcastle, for the sum of $375. This work is also completed.

It was deemed advisable to remove the fog-alarm hitherto maintained at St. Martin's Head, in the County of Saint John, Bay of Fundy, to the light station at Apple River, Cumberland County, Nova Scotia, and the alarm was consequently discontinued on the 1st April last.

The following is a synopsis of the principal repairs and improvements effected at the lighthouse stations in this division.

Beacon Light.—St. John Harbour.

A new boat supplied at a cost of $37, and repairs and plastering made to the dwelling house.

Belle-Isle Beacon Lights, River St. John, King's County.

Instructions have been given for the erection of two beacon lights to range with the dredged channel, to guide vessels from the buoy to the public landing at Hatfield's Point.

Cape Spencer Light.

The sum of $30 has been expended on the road leading to the lighthouse.

Dipper Harbour Light.

This light was changed from a white to a red light on the 20th of September last.

Grindstone Island Light and Fog-Alarm, Albert County, Bay of Fundy.

The coal shed at Mud Cove has been thoroughly repaired and strengthened, and a small derrick erected for hoisting the boat. The fog-alarm and the dwelling were also repaired, at a cost of $145.82.

It has also been decided to place a Neptune fog-horn at this station, to replace the present alarm, which is old, very intricate in character and style of machinery, and expensive to keep in repair.

Gannet Rock Light, Bay of Fundy.

The keeper was authorized to have a water tank built, and brick and cement were sent to him for this purpose.

Green Head Light.

A small shed has been built at this station for storing oil.

Goose Lake Light.

The lighthouse at this station has been repaired, at a cost of $250.

Grand Harbour Light.

A new water tank was built at this station and the road repaired.

Grand Manan Fog-Alarm.

A new roof was put on the tank house, and the roof of the shed connected with the fog-alarm. Water pipes were laid from the reservoir to the whistle house, and a new set of tubes put in the boiler.

Letête Fog-Alarm.

A new boiler has been sent to this station by the steamer "Lansdowne," and placed in position.

Machias Seal Island Light and Fog-Alarm.

The fog-alarm boiler has been repaired and extensive repairs effected to the dwelling and an addition made to it. Repairs were also made on both lighthouses. A new boiler has also been placed in position at this station.

Miscou Light and Fog-Alarm.

A new boiler was placed in position at this station during the past season, and considerable alterations made, owing to the boiler supplied being larger than the old one.

The whistle, which had been discontinued, pending repairs, was in put in aga operation on the 24th September last.

The whistle sounds, as heretofore, a blast of five seconds' duration every half minute.

Oromocto Shoals Light.

The lighthouse was repaired and painted, at a cost of $93.

Partridge Island Lighthouse and Fog-Alarm.

One of the boilers of the fog-alarm has been covered with asbestos, and this has effected a great saving of fuel and steam.

North Tracadie Lighthouse.

Repairs have been made to the lighthouse tower, at a cost of $150.

The total cost of maintaining the lights, fog-whistles, buoys and beacons in the Province of New Brunswick, for the fiscal year, amounted to $78,285.79, and the amount expended during the same period on construction of lights was $2,966.36.

PRINCE EDWARD ISLAND LIGHTHOUSE DIVISION.

This division is under the charge of Mr. Artemas Lord, who is Agent of the Department at Charlottetown. There are 50 lights and one fog-alarm, under the charge of 38 keepers. The majority of the lights are situated on headlands, and serve the general purposes of navigation, and the remainder are harbour lights, and intended principally for the benefit of fishermen.

The lights in this division were inspected last season by the Agent in the Schooner "Prince Edward," and the usual supplies delivered. From the report received the lighthouses appear to be in fair condition, and kept in good order.

During the past season two range lights were established at Darnley, in the County of Prince, on the north shore of the Island. The outer, or front range light, is shown from a lantern, hoisted upon a mast 30 feet high, with a shed painted white at its base, and is located near the shore line about 6½ cables south-eastwardly from Cape Aylesbury. The light is fixed red, elevated 40 feet above high water mark, and should be visible seven miles.

The inner, or back range light, stands 1,444 feet south-west of the front range light. The building and illuminating apparatus are in every respect similar to the other light. The light is elevated 65 feet above high water mark, and should be visible seven miles.

Owing to the channel over the outer bar at the entrance to North or Grand Rustico Harbour having shifted about half a mile to the north-westward of the position of the entrance of last year, it was found necessary to move the front range light correspondingly, to keep the lights in range with the black can bar buoy.

The two range lights, as they now bear, show across the breakwater on the north side of the entrance to the harbour, and they can consequently only be used in range for the purpose of indicating the position of the bar buoy. A beacon, painted white, has been erected on the outer end of the breakwater, to more clearly indicate its position. It consists of a mast 25 feet above the deck of the pier, with a diamond-shaped slatted beacon at its head.

Owing to the unsatisfactory character of the front range light at Crapaud, it was decided to remove the blue sector and to show a fixed white light from all points of approach, on the first of June last.

A light was established on the opening of navigation on the outer end of the beakwater pier at Souris East. The light is fixed red, shown from a small dioptric lantern hoisted upon a mast, at an elevation of 45 feet above high water mark, and in clear weather should be visible 8 miles from all points of approach seaward. The mast is 41 feet high, with a square flat-roofed shed at the base, the whole being painted white.

This light has been established to enable vessels seeking shelter to accurately locate the outer end of the breakwater and gain safe anchorage, in deep water in the harbor, under its lee.

It is possible that in very heavy weather the light may be extinguished, when it may prove impossible to relight it promptly. This contingency must be accepted by vessels making for the shelter of the harbour.

The red sector heretofore shown in the light on Knight's Point, Souris, has been removed, having being rendered unnecessary by the Souris pier light. The Knight's Point light now shows fixed white from all points of approach.

Two pairs of range lights have been authorized to lead into Charlottetown Harbor, which when completed will indicate a 30 foot channel clear of all obstructions. One pair is located on Haszard's farm, South eastwardly from the month of the harbour, the other pair on Brighton beach, in the harbour. These lights have been nearly completed, under the supervision of the Agent.

During the past year protection work of brush and stone, involving an expenditure of $300, was carried out at Sandy Island, Cascumpeque, station, but an additional expenditure will be required on the eastern edge of the Island to complete the work.

Temporary repairs have been effected at the lighthouse at New London, but the foundation of the lighthouse requires thorough repairs.

A breastwork of piles, brush, and stone has also been built at North Rustico station, at a cost of $205, for the protection of the lighthouse.

Extensive repairs have been effected during the past year to the fog-alarm station at East Point, and it is now in excellent condition.

Repairs were also made to the breakwater at Indian Point, Summerside Harbour, and the iron caisson, on which the lighthouse tower is built, was scraped and coal tarred.

Extensive repairs were made to the foundation of the lighthouse at Sea Cow Head, and some repairs also to the dwelling.

The total cost of maintaining the lights in the Province of Prince Edward Island for the last fiscal year was $19,118.51.

BRITISH COLUMBIA LIGHTHOUSE DIVISION.

This division is under the charge of Mr. H. G. Lewis, Agent of the Department at Victoria. There are 10 lighthouses in this Province, and two steam fog-alarms, under charge of 10 keepers, who provide the necessary assistants.

The following is a synopsis of the principal work effected at light stations in this division :—

Race Rocks.

The old bell tower has been removed, the tank repaired, oil shed erected, and boiler and engines put in good order.

East Point—Saturna Island.

A fence has been erected at this station, ground levelled and road made.

Sand Heads, at the mouth of the Fraser River.

Arrangements have been made to drive two clusters of wooden piles around the building, for the further protection of the iron screw pile foundation.

Point Atkinson.

The fog-alarm at this station, put in operation on the 10th November, 1888, sounds blasts of 8 seconds' duration, with intervals of one minute between the blasts.

The fog-alarm is situated about 200 feet from the lighthouse, and is of wood, painted white, with a brown roof.

It was found necessary, owing to the water tank built in the ground not proving sufficiently large, to build a retaining wall for a cistern, about 100 yards from the engine house, and this so far has secured a sufficient supply of water.

A light hung on a buoy was established on the 1st August last at Shoal Point, at the entrance to Victoria Harbour, Vancouver Island, and gives good satisfaction.

The light is fixed red, at an elevation of about 5 feet above the water.

The buoys at the Sand Heads, during the past season, were cleaned and painted.

It was deemed advisable to discontinue the spar buoy on Beaver or Spence's Rock, Victoria Harbour, as it was in the way of vessels.

Three beacons were erected last season at the First Narrows of Burrard Inlet, Gulf of Georgia, in the district of New Westminster.

Each beacon consists of five piles, forming a cluster 4 feet in diameter at the top, and rising to a height of 8 feet above high water mark, the whole painted black, and surmonted by a triangle 10 feet high, placed base upwards, and painted white.

Buoys and beacons have also been established in Bayne's Sound, on the east coast of Vancouver Island, as follows :—

A beacon consisting of three piles at Maple Point, and a red spar buoy on western extremity of Reef Bluff.

A beacon similar to that at Maple Point at Base Flat.

A red spar buoy on the end of reef, Village Point.

A beacon, consisting of a single pile, at Union Spit.

A beacon of the same description at Grassy Point.

The total cost of maintaining the lights, fog-alarms, buoys and beacons in the Province of British Columbia for the fiscal year ended 30th June last, was $16,877.12, and the expenditure for construction was $1,890.

CAPE RACE LIGHT.

As stated inthe last annual report, the lighthouse at Cape Race, on the Island of Newfoundland, was formally transferred by Her Majesty's Government to the Government of the Dominion on the 1st July, 1886, and the sum of $100,151.50, being the balance of the moneys collected by the Board of Trade, London, for Light dues, was paid to the Dominion Government, it being agreed that the lighthouse and fog-alarm shall be maintained in future at the expense of the Dominion, and no dues be charged for such maintenance. The cost of maintenance of this station for the past fiscal year amounted to $7,358.01, but in this sum is included the cost of a new boiler ($2,050,) which it was found necessary to supply, and the sum of $1957.15 for repairs. During the past season a new Crosby operating valve and 12 new tubes have been supplied the boiler. The roof of the whistle house has

been covered with felt, and a new coal shed has been built at the landing, together with tramway leading directly into the shed, and some necessary blasting of rocks effected at the landing.

The expenditure on account of this station since its transfer to Canada has been as follows, viz:—

1886-7	$4,453 25
1887-8	5,124 20
1888-9	7,358 01

This lighthouse is indispensable to the safety of Canadian and other vessels navigating the North Atlantic to and from Canada, and by its transfer to Canada the Dominion has been relieved from the payment of lighthouse dues which amounted yearly to about $1,200.

Changes in Lightkeepers.

The following new light-keepers have been appointed in the Dominion, during the year ended 1st December, 1889.

Name of Keeper.	Name of Station.	Date of Appointment by Order in Council.	Salary per annum.	Remarks.
	LIGHTS ABOVE MONTREAL.	1889.	$	
Wm. Orser	Weller's Bay	Feb. 16.	150	Succeeded R. Young, superannuated.
Honoré Sauvé	Caron's Point	do 16.	60	Succeeded A. Caron, deceased.
Wm. S. Boyd	Griffith Island	May 14.	350	Succeeded G. W. Patterson, resigned.
Matthew Howe	South-East Bay Light	do 22.	60	Succeeded W. Robert Barr, who
S. E. Oldfield	Point au Baril	June 4.	300	had charge of two stations.
Mrs. P. McAvoy (temporary).	Brown's Point	July 11.	150	New light. Succeeds P. McAvoy, deceased, to be in charge until a permanent
Damase Boyer	Lake St. Louis Lightship No. 2	Oct. 26.	300	appointment made.
J. B. Richer	do do No. 3	do 26.	300	Succeeded J. Taillefer, superseded.
Louis Miron	Gargantua	do 26.	400	Succeeded O. Veaudry do
Charles Leger	2 Pole Lights at Lachine		50*	New light.
George Cosgrove	Victoria Island, Lake Superior.	Nov. 14.	350	do In room of Louis Boucher, resigned.
	LIGHTS BETWEEN MONTREAL AND QUEBEC.			
Lucien Hardy	Main Light at Champlain	Aug. 2.	80	Succeeded Napoleon Hardy, deceased.
Valérie Martineau	Pole Light do	do 2.	60	
	LIGHTS BELOW QUEBEC.			
Victor Faffard	Point des Monts	July 10.	400†	Succeeded L. F. Faffard, superannuated.
Donald McLaren	Chicoutimi Range Light	Sept. 19.	35	Succeeded J. Marier, deceased.
George Tremblay	do do	do 19.	35	
Thomas M. Wyatt	Forteau	do 18.	800	Succeeded M. T. Wyatt, superseded.

* In addition to $200, which he receives as keeper of the Lachine pier light.

† And an allowance of $150 for signal gun, and fuel and water.

LIGHTS IN NEW BRUNSWICK.

Name of Keeper.	Name of Station.	Date of Appointment by Order in Council.	Salary per annum.	Remarks.
W. J. Pendlebury ..	St. Andrews	April 10..	250	Succeeded G. A. Pendlebury, resigned.
Ferdin'nd Robichaud	Tabusintac	do 10..	150	Succeeded Thos. Savoy, deceased.
Rev. S. E Moore ...	Anderson's Hollow	May 14..	100	New light.
Wm. Ryan	Miramichi Lightship	do 22..	400	Succeeded T. Daly, deceased.
John DeGrace	Indian Point	June 4..	150	New light.
Stanislaus Preston ..	Preston's Beach	July 11..	125	Succeeded Thos. Lewis, superseded
A. B. Richard	Fort Folly Point	Sept. 19..	125	New light.
Robt. Bultimer	Belloni's Point	do 19 :	100	do

LIGHTS IN NOVA SCOTIA.

Edward O'Leary	Beaver Island	Feb. 11..	350	Succeeded J. W. Hall, retired.
M. Riorden	Annapolis Royal	do 16..	100	New light.
J. H. Belliveau	Belliveau Cove	do 16..	80	do
Henry Aucoin	Cheticamp Range Lights	May 14..	100	do
Geo. A. Briggs	Apple River Fog Alarm	do 14..	500	Transferred from Martin's Head fog-alarm station, N.B.
Wm. Burke	Louisburg	June 26..	350	Succeeded L. Kavanagh, superannuated.
D. McAskell	St. Ann's Harbour	do 26..	140	Succeeded Angus Morrison, superseded.
Hugh McDonald	Cape St. George	July 11..	450	Succeeded W. J. Condon, resigned.
Geo. J. Reid	Isle Haute	Oct. 18..	500	Succeeded Nelson Card, superannuated.
Alex. Fraser	Pictou Harbour Range Lights..	Nov. 7..	100	New lights.

LIGHTS IN PRINCE EDWARD ISLAND.

James Johnston	Crapaud	May 14..	100	Succeeded H. P. Palmer, superseded.
S. J. B. Leard	Crapaud Inner Range Light	do 14..	80	Acting Keeper, since 1878.
James A. McDonald.	Savage Harbour	July 11..	100	Succeeded A. McDonald, deceased.
John D. Morrison...	Darnley Point Range Lights...	Sept. 9..	80	New lights.

LIGHTS IN BRITISH COLUMBIA.

W. P. Daykin	Race Rocks	Dec. 6, '88	600‡	Succeeded F. Argyle, retired.
John R. Wick	Sand Heads, screw pile lighthouse.	Oct. 26, '89	900§	Succeeded W. P. Daykin, transferred to Race Rock Light.
James Georgeson ...	East Point, Saturna Island	do ..	500	Succeeded J. R. Wicks, transferred to Sand Head Light.

‡ An allowance of $600 per annum for assistance. § For himself and assistant.

OIL.

Contracts were entered into in March, 1887, with the Imperial Oil Company, of Petrolea, Ont., and M. J. Woodward, of Petrolea, for the supply of petroleum required for lighthouse purposes, and oil was delivered at the following rates, viz. :—Twenty-four cents per gallon at Halifax and Pictou, 23½ cents at St. John, 22 cents at Quebec, 21¾ cents at Montreal, and 20½ cents at Hamilton and Goderich. By the terms of the contract the oil is required to be delivered in new square cases,

of the best brand of heavy tin, containing each 4 or 5 Imperial gallons, every two cans to be enclosed in a wooden case. When oil is supplied in barrels, a deduction of 3 cents per gallon is made on the price. The oil is required to be of the best quality of double distilled standard white, extra refined petroleum, free from acid or other impurities, to weigh at 62° Fahr not less than 7·85 nor more than 8lbs per gallon; to withstand a flash test of 115 Fah., by the standard pyrometer, and in all other respects to comply with the requirements of the Petroleum Inspection Act., 1880, and its amendments.

The quantity supplied to the lights above Montreal during the past fiscal year was 22,416 gallons; to the lights in the Quebec district, 14,504 gallons, to the lights in the Nova Scotia district, 43,789 gallons; to the New Brunswick district, 12,529 gallons; to the lights in Prince Edward Island, 5,805 gallons and to lights in British Columbia, 4,300 gallons, making in all 103,343 gallons. This includes a quantity of American oil purchased for the use of dioptric lights.

DOMINION STEAMERS.

The steamers under the control of this Department consist of the screw steamer "Napoleon III," the "Druid," paddle wheel; the "Newfield," screw; the "Lansdowne," screw; the "Alert," screw; "Northern Light," screw; the "Stanley," screw; and the "Bayfield," screw, and the small steam launch "Dolphin," employed at Quebec in connection with the River Police force, and also the "Sir James Douglas," screw, with her small steam launch tender.

The steamer "Napoleon III" was employed during the past season in supplying the lights in the River and Gulf of St. Lawrence, Strait of Belle Isle and Baie des Chaleurs, and also attended to buoy service, and served for a period as a light-ship in the Traverse. The sum of $2,231.41 was expended in necessary repairs to boilers and engines, to fit the vessel for the work of the season.

The steamer "Druid" was employed in attending to the gas and other buoys in the River St. Lawrence, and also supplied a number of the river lights. The hull of this vessel, considering her age, is in fairly good condition, and during the past season repairs were made to the cylinders and machinery, at a cost of $1,643.62, which the agent reports are so well made that with some repairs to the guards to be carried out this winter she will probably last for some years.

The Steamer "Newfield" was employed on the opening of navigation in buoy and light service, and after completing this was engaged in cable service in the Gulf of St. Lawrence until the end of June. She then fitted out for supplying the eastern lights and Cape Race, which occupied her up to the middle of August, when she proceeded to supply the New Brunswick lights on the north shore, and afterwards attended to light service on the western shore and cable service at Grand Manan and Eastport. On her eastern trip in July the ship touched on a reef while entering Crow Harbour in Chedabucto Bay, and it was found necessary to place her on the marine slip at Halifax, and put three new plates in her bottom, costing for slip hire and repairs $1,268.14.

The Steamer "Alert" has not been employed on active service during the past season. During the summer her boilers were lifted for examination, some small repairs made and the boilers replaced. She was afterwards placed in the new dry dock at Halifax, where her bottom was cleaned and painted. She will be kept as a spare boat for lighthouse and buoy service.

The steamer "Lansdowne" was employed during the early part of the season in coaling fog-alarms, and supplying lighthouses in the Nova Scotia district, and after completing this work supplied the light stations in the Bay of Fundy, and attended to buoy service.

The new steel steamer "Stanley," built expressly for the winter service between Prince Edward Island and the mainland, commenced work on the 18th December, and made almost daily trips between Charlottetown and Pictou until the 25th December, when it was deemed advisable, owing to the accumulation of ice in Charlottetown harbour, to ply between Georgetown and Pictou. Daily trips were made between these ports up to 23rd February, 1889, when the vessel was laid up to clean boilers. On the 5th March work was again resumed, and the vessel continued to run until the 9th April, at which time the Steam Navigation Company put their summer boats in operation, and the "Stanley" was laid up.

During the summer season the "Stanley" has been employed on Fisheries Protection Service on the north side of Prince Edward Island, and has proved a very efficient cruiser.

During the winter season of 1888–89 the "Stanley" made 79 round trips, and her earnings for freight and passengers amounted to $9,141.83, irrespective of the mail service. Steam communication between Prince Edward Island and the mainland during the winter months has never been so successfully maintained as it was last winter by the "Stanley," and her services on this route have given great satisfaction to the people of the Island.

The steamer "Northern Light" being unfit for further winter service, as stated in the last annual report, was laid up at Pictou in December last. Tenders have been invited for her purchase, and it is probable she will soon be sold, as several offers have been made for her.

The steamer "Sir James Douglas" stationed at Victoria, B.C., was employed as usual during the past season in attending to the light and buoy service in British Columbia, and was also engaged for a period in the service of the Indian Reserve Commissioner.

The agent reports the hull of this vessel in good condition. But the boiler has been used for 14 years and will probably require to be renewed after another season. The engine is in fairly good condition.

The "Bayfield" is a wooden steamer of 150 tons gross and 94 tons register, and is employed for the purposes of the hydrographic survey of the Georgian Bay.

The amount expended during the fiscal year ended 30th June last, for the maintenance of the "Napoleon III" was $25,605.41; "Druid," $4,717.47; "Newfield," $33,380.71; "Alert," $2,231.43; "Lansdowne" $25,840.48; "Stanley" $20,940.50; "Northern Light," $2,346.77; and "Sir James Douglas," $11,376.45; and the entire expenditure amounted to $126,629.33.

ICE BOAT MAIL SERVICE.

Owing to the "Stanley" lying up to clean boilers, it was found necessary to organize the Capes Mail Service on the 23rd Febuary. The first boat crossed on the 24th February, and the service was continued up to the 2nd March, when the mails were transferred to the "Stanley." Owing, however, to the "Stanley" being delayed in reaching Pictou, by heavy Gulf ice, the mails were again taken

to the Capes on the 7th March and conveyed to the mainland by that route until 13th March, when they were again transferred to the "Stanley." During the short period the ice boat service continued, 23 passengers and 624 mail bags were carried over. The gross earnings amounted to $53.17, and the expenditure for the fiscal year, including cost of four new ice boats, amounted to $1,941.35. If the winter is a favorable one, it is possible the ice boats may not be required, but the service must be maintained in an efficient state, in case the "Stanley" may be at any time blocked by ice. This will explain why so large an expenditure has to be made even although the ice boats may not be required.

HARBOUR POLICE.

A police force has been established for a number of years past at the ports of Montreal and Quebec, for the purpose of keeping order among the shipping, and restraining crimping, and a tonnage duty of 3 cents per ton register was imposed under the provisions of Chapter 90, Revised Statutes, on every vessel entering at Quebec or Montreal, vessels of 100 tons or less being required to pay this duty once in each calendar year and vessels of more than 100 tons twice in each year. The dues thus collected for the maintenance of the Force were considered burdensome to shipping at Montreal, and the Board of Trade of Montreal having urged that they be abolished in the interests of the trade of the port, an Order in Council issued on the 8th April last, directing that the Harbour Police Force be no longer maintained, and that instructions be issued to the Collector of Customs at Montreal no longer to levy upon vessels entering that port the tonnage duty imposed under the Act above stated.

Owing to the fact that the city authorities of Montreal were not able to assume police protection on the wharves, on account of their appropriations having already been made for the civic year, it was decided to continue the Force until the 30th November last, and to collect the dues in the meantime. The Force was permanently disbanded on the 30th November last and Mr. H. St. A. Ormond, Inspector of the Force, and Agent of the Department at Montreal, was placed on the retired list from the 1st December, with a pension of $308 per annum, and Mr. George Murphy, Chief Constable, with a pension of $263.04 per annum.

In view of the large expenditure incurred for many years in the maintenance of the River Police Force at Quebec, and the desirability of bringing the expenditure as near as possible to the receipts, and considering the amount of shipping requiring protection, it was decided to dispense with the services of Mr. B. Trudel, Shipping Master and Chief of River Police at Quebec, and Mr. John Giblin, clerk in the shipping office, whose salaries had been charged to the Harbour Police vote, and an Order in Council issued accordingly on the 22nd May last, dispensing with the services of both of these officers. Mr. Trudel received a retiring allowance of $330. Since the retirement of Mr. Trudel the Force has been under the charge of Mr. Gregory, Agent of the Department, who was also appointed by Order in Council of 11th July last, temporarily, Shipping Master, for the port of Quebec, in the room of Mr. Trudel.

The River Police Force at Quebec was constituted as follows during the season which has just closed, viz:—The Chief Constable (retired 22nd May), one deputy chief constable, $2.40 per diem; five coxswains, at $1.90 per diem; 14 constables, at

$1.50 per diem; and one engineer at $50 per month—making 21 in all, being a reduction of 9 in the number employed during the previous season. The Force was sworn in on the 1st May and disbanded on the 30th November, but some of the constables, numbering 13 in all, were discharged on the 18th November, as owing to the small amount of shipping in the port, there was no necessity for their services.

During the past season, the police steamer "Dolphin" patrolled the harbour twice a day, making in all 364 trips.

The total number of arrests made was 95, a great falling off from the previous season, when 217 arrests were effected. 312 desertions were reported.

The total amount expended in connection with the maintenance of the Quebec River Police for the fiscal year ended 30th June last was $14,698.68, while the dues collected during the same period amounted to $8,035.26, showing a deficiency of $6,663.42.

The Force at Montreal during the season consisted of the Inspector; one Chief Constable, with a salary of $3 per diem; five sergeants at $1.90 per diem; one caretaker at $1.00 and 23 constables at $1.50, except during the month of May, when 24 constables were employed. The Inspector received salary at the rate of $1,400 per annum. This Force was sworn in on the 1st and 2nd May, and as stated above was permanently disbanded on the 30th November last.

The total expenditure amounted to $16,948.82, and the Harbor Police dues collected amounted to $11,653.01, showing an excess of expenditure over receipts of $5,295.81.

The total amount expended during the fiscal year at Quebec and Montreal on account of Harbor Police services was $31,647.50, and the amount collected was $19,688.27, showing an excess of expenditure over receipts of $11,959.23.

The receipts and expenditure on account of this service during the past twenty years are as follows, viz.:—

	Receipts.	Expenditure.
	$ cts.	$ cts.
For fiscal year ended 30th June, 1870	23,996 68	18,461 83
do do 1871	21,235 06	17,400 73
do do 1872	27,215 80	20,348 00
do do 1873	26,618 50	32,653 87
do do 1874	28,650 39	38,897 52
do do 1875	25,620 09	37,895 00
do do 1876	26,499 09	41,222 68
do do 1877	28,598 10	35,006 37
do do 1878	26,702 43	37,560 14
do do 1879	21,464 97	38,486 50
do do 1880	21,510 15	35,225 54
do do 1881	27,375 09	35,451 07
do do 1882	21,420 33	42,316 56
do do 1883	28,060 02	38,318 65
do do 1884	28,497 25	41,980 72
do do 1885	20,698 79	38,082 92
do do 1886	24,089 97	43,916 57
do do 1887	22,934 49	40,340 12
do do 1888	21,072 73	37,279 52
do do 1889	19,688 27	31,647 50
	491,948 17	700,500 81
Deduct receipts from expenditure		491,948 17
Excess of expenditure over receipts		208,552 64

SICK AND DISTRESSED MARINERS.

Under the provisions of Chapter 76, Revised Statutes, a duty of 2 cents per ton register is levied on every vessel arriving in any port in the Provinces of Quebec, Nova Scotia, New Brunswick, Prince Edward Island and British Columbia, the money thus collected forming "The Sick Mariners' Fund." Vessels of the burden of 100 tons less pay the duty once in each calendar year, and vessels of more than 100 tons, three times in each year.

By an amendment to this Act passed at the Session of Parliament in 1886, 50-51 Vic., Chap. 40, it is provided that no vessel which is not registered in Canada, and which is employed exclusively in fishing or on a fishing voyage, shall be subject to the payment of this duty.

The receipts for the fiscal year ended 30th June last amounted to $39,306.29, being a decrease as compared with the receipts of the preceding year of $2,436.84.

The Sick Mariners' Act does not apply to the Province of Ontario, and consequently no dues are collected from vessels in that Province, and no expenditure is incurred on account of sick seamen. For a number of years past, however, a grant has been made by Parliament of $500 to the General Hospital at Kingston, and a similar amount to the General and Marine Hospital at St. Catharines, for the care of such seamen as may be received. It is proposed in future to pay out of their votes only the amount of a per diem rate for the actual number of sick seamen treated and cared for at their hospital.

In the Province of Quebec the expenditure on account of sick and distressed seamen, including the total expenditure for the Marine and Immigrant Hospital, amounted to $23,388.57. Of this sum $1,412.17 was expended on account of shipwrecked and distressed seamen, and $2,135.79 for sick seamen at ports other than those of Montreal and Quebec.

At the Port of Montreal sick seamen are cared for at the General Hospital and Notre Dame Hospital, under an arrangement made by the Department, by which 90 cents per diem is paid for the board and medical attendance of each seaman. The amount paid the Montreal General Hospital during the past fiscal year was $1,039.50, and Notre Dame Hospital, $803·70. The sick mariners' dues collected during the same period at the Port of Montreal amounted to $2,364.84.

At the port of Quebec sick seamen are cared for at the Marine and Immigrant Hospital. The sum of $20,000 was appropriated by Parliament for the maintenance of this hospital, and the expenditure for the last fiscal year amounted to $18,643.14. A grant of $1,866.67 was received from the Government of Quebec, and the sum of $257.20 for rent of beach lots, board of patients, &c., making the total amount deposited to the credit of the Receiver-General $2,123.87, thus reducing the cost of maintenance to the Government of the Dominion to $16,519.27. In this sum the cost of maintaining sick immigrants as well as seamen is included, and estimating the cost of immigrants, of whom 31 were treated and remained in hospital 223 days, at $373.11, the cost of sick seamen would amount to $16,146.16. By reference, however, to the report of the resident physician it appears that during the past fiscal year, out of 351 patients, 211 were seamen having 4,571 days' treatment; 31 were immigrants, having 223 days' treatment; and 109 residents, having 5,079 days' treatment—thus showing, as stated in former reports, that the amount contributed by the Government of Quebec towards the support of residents in the hospital is

altogether inadequate. A fair proportion of the cost of the institution for the past fiscal year would be as follows, viz. :—For seamen $8,631.39; for immigrants, $421.09; and for residents, $9,590.66.

In view of the fact that the grant made annually by the Legislature of Quebec, and which had been reduced from $4,000 to $1,866.67, proved altogether inadequate for the support of residents in the hospital, and that it had been decided no longer to send immigrants to the hospital, and as many complaints had been made that the tax for sick mariners' dues pressed severely upon shipping, and should be reduced if possible, it was decided by Order in Council of 30th May last to admit no residents to the hospital from and after 1st July, 1889, and to receive no further contributions from the Local Government for the support of residents.

It was also decided by Order-in-Conncil of 28th June last to dispense from 1st August, 1889, with the services of the commissioners and visiting physicians, as they did not appear to be any longer necessary in view of the fact that residents were no longer to be admitted, and the number of seamen requiring relief was comparatively limited. A gratuity of one year's salary is to be asked for the commisioners and visiting physicians, and of two years to the secretary, on their retirement, and provision will be made for this vote in the Supplementary Estimates.

The sick mariners, dues collected at the port of Quebec during the last fiscal year amounted to $6,053.08, being $1,535.08 less than the previous year. The total collections in the Province of Quebec for the same period amounted to $10,760.36, being $2,239.63 less than the previous year. The expenditure for sick and distressed seamen at the different ports in Quebec, estimating the actual charge to the fund for the Marine Hospital at $16,519.27, amounted to $21,264.70, showing an excess of expenditure over receipts of $10,504.34.

The expenditure on account of sick and distressed seamen in the Province of New Brunswick for the last fiscal year amounted to $7,129.37, and the receipts amounted to $8,745.93. Marine Hospitals have been established for a number of years at the ports of St. John, St. Andrews, Miramichi, Richibucto, Bathurst and Sackville.

The collections at the port of St. John for the sick mariners' fund amounted for the last fiscal year to $5,160.40, and the cost of maintenance of the Marine Hospital amounted to $3,911.79, in addition to expenditure by the Department of Public Works.

In the Province of Nova Scotia Marine Hospitals are established at the ports of Yarmouth, Pictou, Sydney, Lunenburg and Point Tupper. At Halifax, provision is made for the care of sick seamen at the Provincial and City Hospital, under arrangements made with the managers, by which the sum of 90 cents per diem is allowed for board and medical attendance of each seaman. The sum of $6,859.90 was collected at Halifax, as sick mariners' dues, for the past year, and the sum paid the Provincial and City Hospital amounted to $6,755.70. At ports in Nova Scotia where no hospitals are established sick seamen are cared for under the direction of the chief officer of Customs. The total expenditure for sick, disabled and distressed seamen in Nova Scotia for the past fiscal year amounted to $15,247.81, and the receipts to $14,080.09, showing an excess of expenditure over receipts of $1,167.72.

In the Province of Prince Edward Island the expenditure on account of sick, disabled and distressed seamen for the last fiscal year amounted to $1,198.68 and the receipts to $441.50. Sick seamen at Charlottetown are cared for at the Prince Edward Island and Charlottetown hospitals under arrangements made with the managers of those institutions.

In the Province of British Columbia the sum of $3,552.92 was expended during the year, and the receipts amounted to $5,278.41.

During the past fiscal year the sum of $584.80 was paid to Her Majesty's Government to re-imburse expenses incurred in caring for shipwrecked and distressed Canadian seamen at foreign ports. The total expenditure by this Department on account of sick, disabled, shipwrecked and distressed seamen during the past fiscal year, including the grant of $500 to each of the hospitals at St. Catharines and Kingston, and the entire expenditure on account of the Marine Hospital at Quebec, amounted to $51,332.34, being $1,887.05 in excess of the previous year, and $10,667.66 less than the amount appropriated by Parliament for this service. It will be seen, however, that as the entire collection of sick mariners' dues amounted only to $39.306.29, the excess of expenditure over receipts is $12,026.05; but should a deduction be made of a fair proportion for maintaining residents of Quebec and immigrants in the marine hospital at Quebec, which amounts, as above stated, to $10,011.75, the expenditure would amount to $41,320.59, and the deficiency would amount only to $2,014.30.

The system of boarding and furnishing medical attendance to sick mariners in city hospitals at 90 cents a day, where there are usually resident surgeons and an organized staff of trained nurses to attend to them, has given great satisfaction to this Department, as it is much more economical, and the patients received the very best of attention, with the advantage of having resident doctors and trained nurses constantly in the hospitals.

The receipts and expenditure in connection with this service during the preceding twenty-one fiscal years are as follows:—

	Receipts.	Expenditure.
	$ cts.	$ cts.
For fiscal year ended 30th June, 1869	31,353 78	26,987 64
do do 1870	31,410 46	27,029 34
do do 1871	29,683 41	28,971 22
do do 1872	34,911 64	38,947 60
do do 1873	37,136 10	41,016 43
do do 1874	41,500 16	59,778 90
do do 1875	37,801 46	50,684 76
do do 1876	41,287 66	48,828 49
do do 1877	43,739 21	51,647 94
do do 1878	44,665 07	43,780 90
do do 1879	37,779 57	42,729 36
do do 1880	42,523 20	42,160 91
do do 1881	49,779 72	40,667 52
do do 1882	45,951 47	39,359 11
do do 1883	45,573 42	36,249 65
do do 1884	48,667 07	39,553 58
do do 1885	39,068 39	44,501 57
do do 1886	40,848 05	50,377 62
do do 1887	42,334 92	37,447 35
do do 1888	41,669 64	36,447 85
do do 1889	39,306 29	41,320 59
	846,990 69	858,488 33
Deduct receipts from expenditure	.....	846,990 69
Excess of expenditure over receipts	.....	11,497 64

METEOROLOGICAL SERVICE.

The report of the Meteorological Service by the Director, Mr. Carpmael, extending from 1st October, 1888, to the 30th November, 1889, forms an Appendix to this report. During the period stated 1,500 warnings of approaching storms were issued, 1,249 of which were verified. The probability service has been maintained as usual, and special predictions were asked for by Boards of Trade and persons engaged in various occupations, and information furnished as far as possible. The sum of $55,000 was appropriated for this service, and the expenditure amounted to $53,496.81.

OBSERVATORIES.

The annual reports of the Director of the Magnetic Observatory at Toronto and the Observatories at Quebec, Kingston and Montreal, are attached to the report on the Meteorological Service. The sum of $4,980.26 was expended on the Magnetic Observatories at Toronto, and $500 for each of the Observatories at Montreal and Kingston. The total expenditure on the Meteorological and Observatory Services for the past fiscal year amounted to $59,477.07.

GEORGIAN BAY SURVEY.

The report of Staff Commander Boulton, R.N., as to the operations of the survey, forms an appendix to this report. The sum of $18,000 was voted for the service last season, making with previous votes, a total appropriation of $138,000 for the service.

The expenditure for the past fiscal year amounted to $17,808.46, and the expenditure on account of this service has been as follows, viz.:—

Year 1882-83	$ 77 81
1883-84	26,745 54
1884-85	20,454 68
1885-86	17,759 36
1886-87	21,592 55
1887-88	19,468 13
1888-89	17,808 46
	$123,906 53

REWARDS FOR SAVING LIFE AND LIFE-BOAT SERVICE.

An appropriation of $10,000 was made by Parliament for the above named service, and the sum of $5,503.44 has been expended during the last fiscal year. In the supplement to be published with this report will be a list of persons to whom rewards and testimonials have been granted by the Government of Canada, and by Her Majesty's Government, and also by foreign Governments, for humane and gallant exertions in saving life at sea, and also of rewards given for saving life on the shores of Canada.

In Appendix No. 6 to this report will be found a statement showing the life-boat stations established in Canada, together with particulars as to boats, crews equipment and services rendered.

TIDAL OBSERVATIONS.

During the past season, the attention of the Department has again been drawn to the importance of establishing a series of stations on the coast of the Dominion, for the purpose of making tidal observations, and a report by Lieut. Gordon, R.N., as to the importance of such observations and the probable cost of carrying them out, forms an appendix to this report.

SIGNAL SERVICE.

The sum of $6,000 was voted by Parliament for this service, and the sum of $5,092.54 was expended during the past year. A report of Mr. H. J. McHugh as to this service, together with a statement of the stations established, forms Appendix No. 5 to this report.

REMOVAL OF OBSTRUCTIONS.

An appropriation of $6,000 was made by Parliament for the removal of obstructions in navigable waters, including the removal of wreck of steamer "Ottawa" in the River St. Lawrence, and the sum of $3,603.65 was expended for this service. During the past season the wreck of the "Ottawa" was successfully removed bythe contractors, Messrs. Fradette & Co. of Quebec. The sum of $13,000 was paid for the removal of this obstruction.

STEAMBOAT INSPECTION AND CERTIFICATES TO ENGINEERS.

The annual report of the Board of Steamboat Inspection for the year 1889 forms an appendix to this report. The statement showing certificates granted to engineers of steamboats will be published in the supplement to this report, together with a list of steam vessels inspected and steam vessels not inspected; number of passengers allowed to be carried; steam vessels added to the list and steamers lost or laid up, or rendered unfit for service during the year.

The amount received during the past fiscal year on account of tonnage dues, inspection of steamboats and certificates to engineers was $12,576.18, of which sum $12,127.18 was for tonnage dues and inspection fees, and $449 for certificates to engineers. The expenditure, as will be seen by reference to Appendix No. 1, amounted to $22,313.03, leaving a deficiency of $9,736.85.

It will be seen by the following comparative statement of receipts and expenditure on account of steamboat inspection for the past nineteen years that during that period the expenditure exceeded the receipts by the sum of $23,094.90. As the expenditure since 1882 has been so much in excess of the revenue it was deemed

advisable to increase the tonnage dues. The dues were therefore increased from 4 to 8 cents per ton on the 1st of October last.

	Receipts.	Expenditure.
	$ cts.	$ cts.
For fiscal year ended 30th June, 1870	12,521 29	7,399 18
do do 1871	10,369 96	8,321 00
do do 1872	11,710 43	8,500 00
do do 1873	15,412 75	11,205 54
do do 1874	15,603 19	10,291 58
do do 1875	15,011 90	12,199 81
do do 1876	13,811 24	13,081 86
do do 1877	15,858 42	12,073 01
do do 1878	12,431 25	13,228 28
do do 1879	12,331 16	13,076 46
do do 1880	15,424 02	11,854 34
do do 1881	16,905 49	12,211 65
do do 1882	15,277 78	14,835 97
do do 1883	12,577 36	16,209 02
do do 1884	15,371 79	21,893 28
do do 1885	13,343 66	23,235 04
do do 1886	14,087 76	21,775 57
do do 1887	12,701 20	22,837 80
do do 1888	12,550 14	21,430 45
do do 1889	12,576 18	22,313 03
	275,877 97	298,972 87
Deduct Receipts from Expenditure	.....	275,877 97
Balance to debit of fund	.....	23,094 90

Mr. Samuel Risley, Chairman of the Board of Steamboat Inspectors was superannuated by an Order in Council dated the 19th of September last on a retiring allowance of $1,152 per annum, and the Deputy Chairman, Mr. W. J. Meneilley, was appointed Chairmain of the Board by an Order in Council dated the 26th October last at a salary of $1,600 per annum, with his headquarters at Ottawa. Mr. Risley transferred his office and papers to the new Chairman on the 1st of November, 1889.

WRECKS AND CASUALTIES.

The total number of casualties to British, Canadian and foreign and sea-going vessels reported to the Department as having occurred in Canadian waters, and to Canadian sea-going vessels in waters other than those of Canada, during the 11 months ended 30th November, 1889, was 163, representing a tonnage of 63,554 tons register and the amount of loss, both partial and total, to vessels and cargoes, so far as ascertained, was $957,199.

The number of lives lost in connection with these casualties was 88.

The disasters reported to this Department as having occurred to vessels on the Inland waters of Canada and to Canadian vessels on American inland waters, during the 11 months ended 30th November, 1889, were 15, and the tonnage involved was 4,230 tons register; and the amount of loss, both partial and total, to vessels and cargoes, so far as estimated, was $29,250. The number of lives lost in connection with these casualties was 21.

When the Wreck Register was closed in 1888 a large number of casualties had been reported, of which the Department had not sufficient particulars to enable it to publish them in the list for that year. Returns have subsequently been received for many of these casualties, and a detailed list of them will be found in the supplement to this report. These casualties have been added to those previously reported, with the result of largely increasing the totals for 1888.

COMPARATIVE STATEMENT of the Losses reported to the Department since 1870.

——	Casualties.	Tonnage.	Lives Lost.	Damage.
				$
For the year ending 31st December, 1870	335	82,808	210	901,000
do do 1871	274	81,035	81	2,100,000
do do 1872	290	99,109	237	2,507,338
do do 1873	350	99,523	*813	2,844,133
do do 1874	308	106,682	109	2,029,965
do do 1875	286	99,427	78	2,468,521
do do 1876	452	153,368	404	2,942,955
do do 1877	468	177,896	153	3,952,582
do do 1878	414	161,760	187	3,445,875
do do 1879	533	198,364	339	4,119,233
do do 1880	445	179,993	217	3,820,652
do do 1881	440	210,719	399	4,992,423
do do 1882	451	193,655	271	3,138,423
do do 1883	366	158,826	259	2,029,752
do do 1884	324	119,741	253	2,965,321
do do 1885	346	144,726	198	2,753,667
do do 1886	377	150,277	54	1,950,799
do do 1887	335	149,395	91	1,662,688
For the 11 months ended 30th Nov., 1888	319	105,060	52	1,126,124
do do 1889	178	67,784	109	986,449

*Of this number, 545 persons were lost by the wreck of the steamship "Atlantic," on the 1st of April, 1873.

The fine iron steamship "Montreal" of Liverpool G.B., stranded during a dense fog on the 4th August last on Belle Isle at the entrance of the Straits of Belle Isle, and became a total loss. The vessel was on a voyage from Montreal to Liverpool with cattle and a general cargo. No lives were lost by this casualty. The vessel was owned by the Dominion Steamship Company, and was valued at $150,000. She was ten years old and 2,160 tons register tonnage.

An investigation was held by Capt. Smith, Chairman of the Board of Examiners of Masters and Mates at Quebec, into the causes which led to the stranding of this vessel and the court found that the Master was not quilty of any wrongful act, or default, and that the cause of the casualty was a very dense fog, the irregularity of the currents and the fact that the signal gun on the Island of Belle Isle was not heard by those on the ship.

From a further investigation made by Captain Smith at Belle Isle, it would appear that the "Montreal" passed Cape Norman at a much greater distance than estimated by her officers, and that from the statement made by the light-keeper at Cape Norman, that in the distance he saw a bank of fog stretching out from Cape Onion obliquely a cross the Straits to the Labrador coast, he would infer that the "Montreal" was enveloped in the fog bank, and that the Master had no means of ascertaining his distance off the land except by soundings. Under these circum-

stances, with the current drifting to the E. S. E. for some time, and the continual changing of the course to avoid icebergs, sometimes to the North and at others to the South, the vessel, was borne in the direction of the island, and was actually to the N. W. of the Light-house Point. In this position, being hemmed in by immense icebergs with a dense fog resting upon them, filling up every crevice, at the same time having the high bluff point of land intercepting the sound of the gun, it would have been a surprise had a report been audible.

A copy of the report of Captain Smith of the investigation held by him at Quebec in regard to the casualty, as also of the investigation held by him at Belle Isle as to the firing of the signal gun, forms an appendix to this report. A report of Captain Smith in regard to complaints made as to the efficiency of the fog-alarm at Cape Bauld, on the Straits of Belle Isle is also appended.

The passenger steamer "Rothesay," 22 years old, 528 tons register, collided with the tug "Myra" on the night of the 12th of September last, about one mile above Prescott, on the River St. Lawrence. By this casualty two of the crew of the "Myra" were lost. No lives were lost on the "Rothesay" which was returning to Ogdensburg from Gananoque with a party of excursionists on board. The "Myra" sank in about 30 feet of water. She was valued at $10,000, and was insured for $6,300.

The Rothesay was beached on the Canadian side of the river, with her bow and hurricane deck out of water. She was valued at $18,000, and insured for $10,000. An investigation was held into the causes which led to the casualty, resulting in the certificates of Captain Alexander Cameron, Master, and John Lasha, Mate, of the "Rothesay," being suspended for 12 months, and to the certificate of Captain John J. Martin, of the "Myra," being suspended for three months—the suspension of the three certificates to date from the 16th October last.

The schooner "Bavaria," of Kingston, 361 tons register, in tow of the steamer "D. D. Calvin," left St. Helena Island, Michigan, on the 21st May last, bound for Kingston, with a cargo of lumber. No accident occurred until the 28th of May, when the "Bavaria" broke adrift in Lake Ontario, near Point Peter, during a very heavy storm. The tow-line in parting carried away the bowsprit and jib-boom. The vessel eventually drifted ashore at Galoo Island, and was found to have received very little injury. The crew of the vessel appear to have taken to the boat, as the light-keeper at Point Peter saw a yawl boat containing four or five men trying to make for land. A heavy rain squall was seen to upset the boat and the occupants were thrown out. By this casualty eight lives were lost.

An enquiry was held into the causes which led to this disaster at Kingston, by Mr. Thomas Donnelly, Hull Inspector. The commission did not consider that the casualty was attributable to any default or unskilfulness. The vessel was injured to the extent of $500,

The steamer "Quinté," of Deseronto, left Deseronto for Picton on the 23rd of October last, with a few passengers on board. Shortly after leaving port a fire was discovered on the lower deck, and spread with great rapidity; the vessel was beached, and burned down to the hull. By this casualty four lives were lost. The vessel was 276 tons register, and was valued at $16,000. She was eight years old. Cap-

tain Thomas, F. Taylor and Mr. Edward Adams, Steamboat Inspector, were appointed to hold a court of enquiry into the causes which led to this casualty, but the finding of the court has not yet been received.

CERTIFICATES TO MASTERS AND MATES—FOREIGN SEA-GOING.

The report of the Chairman of the Board of Examiners of Masters and Mates of sea-going ships for the year ending 30th November 1889 will be found in the supplement of this report.

During the past twelve months, as will be seen by reference to the report in the supplement, the Board of Examiners have held meetings for the examination of candidates at the ports of Halifax, N.S., St. John, N.B., Quebec, and Yarmouth, N.S.

One hundred and fifty-three candidates presented themselves for examination at the ports named; one hundred and eleven succeeded in passing, while forty-two failed. Of the one hundred and eleven that passed, sixty-two received certificates as master, forty-five as mate, and four as second mate.

The number of candidates who have passed and obtained sea-going masters' certificates of competency since the Act went into operation, viz., 16th September, 1871, to the 30th November, 1889, is 1,684, and the amount paid for certificates, at the rate of $10 each, $16,840. During the same period 1,111 candidates received certificates of competency as mate, and the amount paid, at the rate of $5 each, was $5,555.

In the supplement referred to a list will be found of all who have obtained certificates of competency and service, either as master or mate, from the 30th November, 1888, to the 30th November, 1889.

During the twelve months five certificates of service, foreign sea-going, for the grade of master, and five for that of mate, have been granted. The total number of certificates of service issued since the Act came into operation is 947 for the grade of master and 380 for that of mate, making a total of 1,327 certificates of service granted. The fee charged for certificates of service is at the rate of $5 for master and $3 for mate.

INLAND AND COASTING CERTIFICATES.

During the twelve months ended 30th November, 1889, the number of candidates who have passed and obtained master's certificates of service is 74, and the amount paid for their certificates, at the rate of $4 each, was $296. During the same period 31 candidates applied for certificates of service as mate, and the amount paid at the rate of $2 each, $62. The number of applicants for certificates of competency as master was 87, and the amount paid, at the rate of $8 each, $696. Forty-seven applied for certificates of competency, as mate, and the amount paid, at the rate of $4 each, was $188. The amount received for renewed certificates of competency and service was $36, making a total of $1,278 received for masters' and mates' inland and coasting certificates.

A list of certificates issued during the twelve months ended 30th November, 1889, will be found in Supplement No. 1 to this report.

The total amount of fees received on account of certificates of competency and service, both sea-going and inland and coasting during the fiscal year ended

30th June last, amounted to $2,202, and the amount in detail expended on account of this service, as will be seen by reference to Appendix No. 1 to this report, was $4,381.04. The amount voted by Parliament for this service was $6,000, and the sum expended to 30th June, 1889, $4,381.04, leaving an unexpended balance of $1,618.96. A list of certificates cancelled during the last twelve months will also be found in the supplement of this report.

The following statement shows the total receipts and expenditure an account of Masters and Mates since, 1871.

	Expenditure.	Receipts.
	$ cts.	$ cts.
For fiscal year ended 30th June, 1871	1,410 45	.....
do do 1872	4,312 07	1,344 00
do do 1873	6,466 18	4,963 00
do do 1874	4,520 19	2,995 00
do do 1875	5,696 62	2,715 00
do do 1876	4,672 08	2,021 87
do do 1877	4,050 00	1,740 50
do do 1878	4,249 76	1,296 50
do do 1879	4,250 12	1,334 50
do do 1880	4,253 43	1,547 00
do do 1881	3,888 41	1,333 50
do do 1882	3,965 19	1,152 50
do do 1883	4,021 20	1,314 00
do do 1884	3,909 59	9,437 50
do do 1885	4,324 15	2,897 00
do do 1886	5,245 28	2,152 00
do do 1887	4,855 98	2.172 00
do do 1888	5,060 96	3,220 80
do do 1889	4,381 04	2,202 00
	83,532 70	45,838 67
Receipts	45,838 67	.....
Excess of expenditure over receipts	37,694 03	.....

In the month of November Captain Henry Lewis one of the Examiners of Masters and Mates at Yarmouth, N. S., resigned his position, on account of poor health.

On the 9th of November Captain H. G. Lewis, Agent of the Department at Victoria, B.C., and James Gaudin, Master of the Government steamer "Sir James Douglas," were appointed Examiners of Masters and Mates in the coasting trade by Order in Council.

COASTING TRADE OF CANADA.

By the provisions of Chapter 83, Consolidated Statutes of Canada, being an Act respecting the coasting trade of Canada, no goods or passengers can be carried by water from one port in Canada to another, except in British ships; but the Governor in Council may, from time to time, declare that the Act shall not apply to the ships or vessels of any foreign country in which British ships are admitted to the coasting trade of such country. The Parliament of Canada was empowered to pass the Act alluded to under the provisions of the Imperial Act, 32 Vic., Chap. 11, intituled: "An Act for amending the Law relating to the Coasting Trade and

Merchant Shipping in British Possessions, which came into operation in this country on its proclamation by the Governor General on the 23rd October, 1869.

It having been ascertained that the following countries, viz., Italy, Germany, the Netherlands, Sweden and Norway, Austro-Hungary, Denmark, Belgium, and the Argentine Republic, allowed British ships or vessels to participate in their coasting trade on the same footing as their own national vessels, the ships of Italy, by Order in Council of the 13th August, 1873; those of Germany, by Order in Council of the 14th of May, 1874; those of the Netherlands, by Order in Council of the 9th of September, 1874; those of Sweden and Norway, by Order in Council of the 5th November, 1874; those of Austro-Hungary, by Order in Council of the 1st June, 1876; those of Denmark by Order in Council of the 25th of January, 1877; those of Belgium, by Order in Council of the 30th September, 1879; and those of the Argentine Republic, by Order in Council of the 18th May, 1881, were admitted to the coasting trade of Canada.

OUTSIDE SERVICE.

The number of persons employed on the Outside Service on the 1st December, 1889, was as follows:—

Superintendent of Lights and Light-keepers &c., in Ontario and above Montreal	152
Officers of agency in city of Quebec, and Light-keepers, Fog-whistle keepers, &c., at and below Montreal, in the Province of Quebec	141
Agent, Clerk, Messenger, Superintendent of Lights, Light-keepers, Fog,whistle Keepers, Attendants at Humane Establishments, &c., in Nova Scotia	197
Agent, Clerk, Messenger, Superintendent of Lights, Light-keepers, Fog-whistle Keepers, &c., in New Brunswick	100
Agent and Light-keepers in Prince Edward Island	40
Agent and Light-keepers in British Columbia	12
Officers and crews of Dominion steamers and vessels	183
Captains of lifeboats	25
Inspectors of Steamboats	15
Examiners of Masters and Mates, and Clerk to Chairman of Board	16
Officers and servants in Marine Hospitals	43
Shipping Masters	26
Harbour Masters	196
Officers of Observatories, Meteorological Observers, &c., receiving pay	102
Receivers of Wreck	45
Wharfingers	86
Making a total of	1,379

For the previous year the number was 1,486. In addition to the 1,486 mentioned above, there are 79 Registrars of Shipping, who act under the direction

and control of this Department, but are at the same time Collectors of Customs at the various ports of registration, and receive no salary or fees in their capacity of Registrars. There are 92 Measurers and Surveyors of Shipping at certain ports throughout the Dominion, who act as officers of this Department, and are remunerated from their fees of office, although, in addition to such office many of them hold a position in the Customs Service. Also, in addition to the above, by Orders in Council of the 21st April and 2nd December, 1874, the Chief Officer of Customs at each port in the Provinces of Quebec, Nova Scotia, New Brunswick, British Columbia and Prince Edward Island, where no separate shipping office has been established, is to be held and deemed a Shipping Master, is to receive the fees, make the half-yearly returns to this Department, and act in that capacity under its directions.

From the above statement it will be seen that there are 102 officers of Observatories, &c., who receive pay for the performance of their duties; but in addition thereto there is a large number of meteorological observers throughout the Dominion who give their services gratuitously.

I have the honour to be, Sir,

Your most obedient servant,

WM. SMITH,

Deputy Minister of Marine.

Department of Marine,
Ottawa, 31st December, 1889.

APPENDIX No. 1.

STATEMENT of Expenditure of the Department of Marine, for the Fiscal Year ended 30th June, 1889.

Service.	Amount.	Total
	$ cts.	$ cts
Ocean and River—		
Maintenance and repairs to Government steamers	126,629 33	
New steamer between Prince Edward Island and mainland	143,595 60	
Examination of Masters and Mates	4,381 04	
Investigations into wrecks and casualties	516 67	
Registry of Canadian shipping	179 21	
Removal of obstructions in navigable rivers, &c	3,603 65	
Rewards for saving life, &c	5,503 44	
R. C. Soy, for injuries received on wrecked steamer "Princess Louise"	200 00	
Water police, Montreal	16,948 82	
do Quebec	14,698 68	
Winter mail service, Prince Edward Island	1,842 47	
		318,100 91
Lighthouse and Coast—		
Salaries and allowances of lightkeepers	178,822 76	
Agencies, rents and contingencies	17,404 20	
Maintenance and repairs to lighthouses, &c	263,196 84	
Completion and construction of lights	31,753 23	
Signal service	5,092 54	
Buoys and beacons, Montreal Harbor, 1887-88 and 1888-1889	14,000 00	
		510,267 57
Scientific Institutions—		
Meteorological service	53,496 81	
Observatory, Kingston	500 00	
do Montreal	500 00	
do Toronto	4,980 26	
		59,477 07
Marine Hospitals, &c.—		
Marine and Immigrant Hospital, Quebec	18,643 14	
Marine Hospital, St. Catharines	500 00	
do Kingston	500 00	
do and sick and disabled seamen	30,696 92	
Shipwrecked and distressed seamen	1,992 28	
		52,332 34
Steamboat inspection		22,313 03
Georgian Bay survey, &c		17,808 46
Civil Government, salaries, including Minister	34,548 81	
do contingencies	8,953 15	
		43,501 96
		1,023,801 34

WM. SMITH,
Deputy Minister of Marine.

F. GOURDEAU,
Accountant.

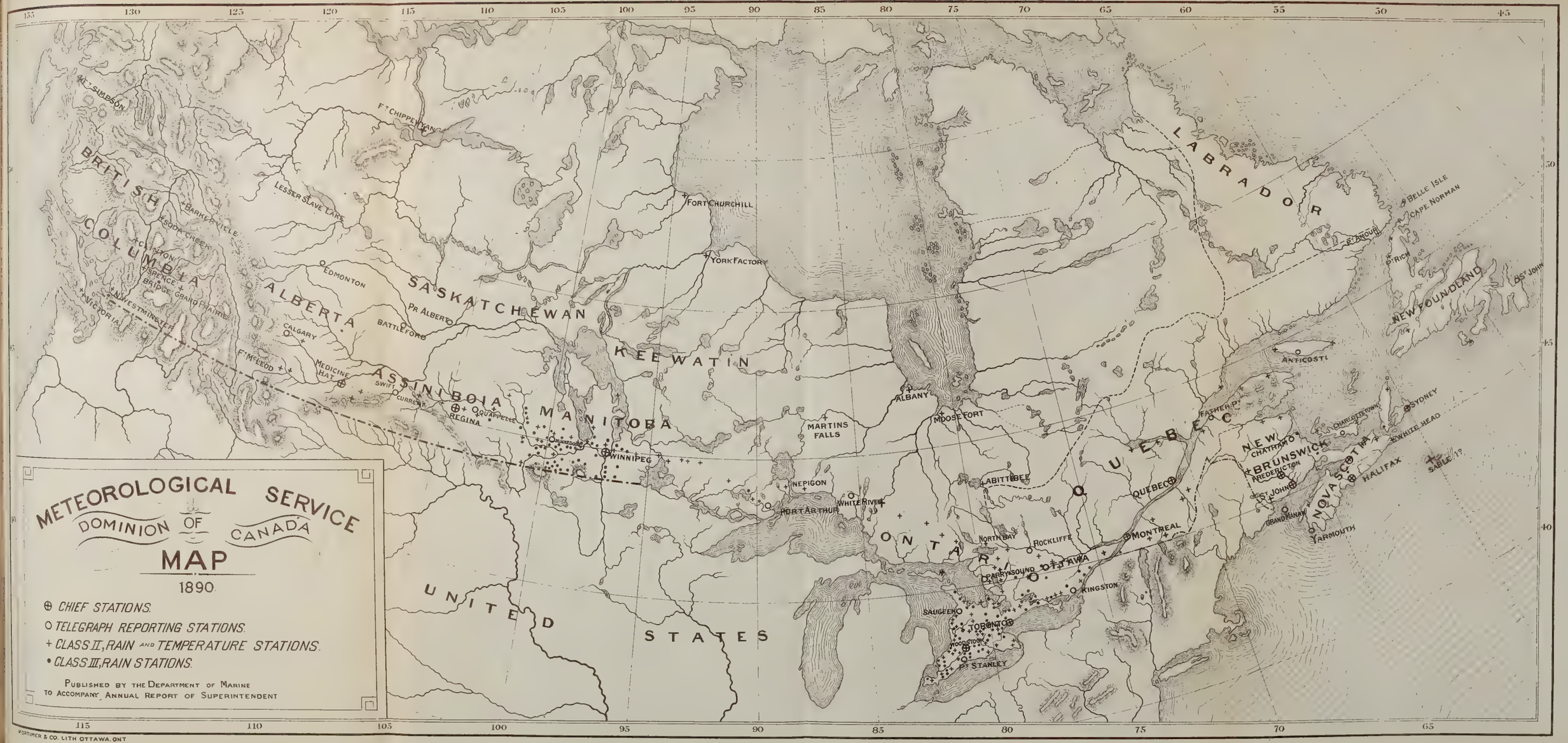
APPENDIX No. 1*a*.

STATEMENT of Revenue of Marine Department, for the Fiscal Year ended 30th June, 1889.

Service.	Amount.
	$ cts.
Casual Revenue	1,391 14
Earnings of Dominion Steamers	16,367 05
Examination of Masters and Mates	2,582 00
Fines and Forfeitures	249 47
Harbors and Piers	5,597 69
Harbor Police	19,688 27
Improvement of Harbors	9 60
Sick Mariners' Fund	39,306 29
Steamboat Inspection	12,624 43
Marine Hospitals	2,123 87
	99,939 81

WM. SMITH,
Deputy Minister of Marine.

F. GOURDEAU,
Accountant.


METEOROLOGICAL SERVICE
DOMINION OF CANADA
MAP
1890.
⊕ CHIEF STATIONS.
O TELEGRAPH REPORTING STATIONS.
+ CLASS II, RAIN AND TEMPERATURE STATIONS.
• CLASS III, RAIN STATIONS.
PUBLISHED BY THE DEPARTMENT OF MARINE
TO ACCOMPANY ANNUAL REPORT OF SUPERINTENDENT
MORTIMER & CO. LITH OTTAWA, ONT
BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
ASSINIBOIA
KEEWATIN
MANITOBA
ONTARIO
QUEBEC
LABRADOR
NEWFOUNDLAND
NEW BRUNSWICK
NOVA SCOTIA
UNITED STATES
FT. SIMPSON
FT. CHIPPEWYAN
LESSER SLAVE LAKE
FORT CHURCHILL
YORK FACTORY
BARKERVILLE
SODA CREEK
CLINTON
SPENCE BRIDGE
GRAND PRAIRIE
NEW WESTMINSTER
VICTORIA
EDMONTON
PR ALBERT
BATTLEFORD
CALGARY
F. McLEOD
MEDICINE HAT
SWIFT CURRENT
QU'APPELLE
REGINA
WINNIPEG
ALBANY
MOOSE FORT
MARTINS FALLS
NEPIGON
PORT ARTHUR
WHITE RIVER
ABITTIBEE
NORTH BAY
ROCKLIFFE
OTTAWA
MONTREAL
QUEBEC
KINGSTON
PARRY SOUND
SAUGEEN
TORONTO
WOODSTOCK
ST. STANLEY
ANTICOSTI
BELLE ISLE
CAPE NORMAN
ST. JOHN
FATHER P.
CHATHAM
FREDERICTON
ST. JOHN
CHARLOTTE TOWN
SYDNEY
WHITE HEAD
HALIFAX
SABLE I.
GRAND MANAN
YARMOUTH

APPENDIX No. 2.

REPORT ON THE METEOROLOGICAL SERVICE.

METEOROLOGICAL OFFICE,
TORONTO, 26th December, 1889.

The Honorable
The Minister of Marine and Fisheries,
Ottawa,

SIR,—I have the honor to submit herewith the nineteenth report of the Meteorological Service, being from the 1st October, 1888, to the 30th November, 1889.

Since the last report the following have been added to our list of stations :—

Ontario.

Class I—
White River (from Class II).....W. E. McLauchlin.
Petrolea.....W. Bell (resumed).

Class II—
Brockville.....E. Worthington.
Shannonville (from Class III).....J. Kemp.
De Cewsville.....R. E. King.
Missanabi.....Agent C. P. R.
Bancroft.....J. Cleak (resumed).
Chapleau.....Agent C. P. R.
Ignace.....Agent C. P. R.
Kingston (bi-hourly temperatures).....Lieut.-Col. Cotton, R. S. G.

Quebec.

Class I—
Lennoxville.....F. W. Frith.

Class II—
Lake Edward.....D. Young.

Prince Edward Island.

Class II—
Georgetown.....F. Macdonald.

Manitoba.

Class II—
Fort Ellice.....T. V. Wheeler.
Posen.....John Fingland.

North-West Territories.

Class II—
Onikup, Cumberland Pass.....Herbert Reader.

British Columbia.

Class II—
Grand Prairie.....R. U. Clemitson (resumed).
Jubilee Mountain.....H. Granger.
Snow Shoe Creek.....R. U. Scott.

Class III—
Maple Grove.....S. M. Baiss.

Newfoundland.

Class I—

Sandy Point.....E. Hirst.

The experimental farms recently established in different Provinces of the Dominion have been supplied with meteorological instruments from this service; they are as follows:—

Ottawa .....Ontario.
Nappan.....Nova Scotia.
Brandon.....Manitoba.
Indian Head.....North-West Territory.
Agassiz. .....British Columbia.

Of these, Indian Head and Agassiz have already begun to report, and from the permanent nature of these establishments, returns of more than ordinary interest may be looked for.

Professor Wm. Saunders, Director Experimental Farms, Ottawa, made application for sunshine recorders for these stations, and when a supply is received from England a recorder will be furnished to each.

The following stations have ceased to report during the period for the reasons assigned against each:—

Class II—

Brantford..... .... } From removal of Dr. McIntyre.
Northcote.....

Biscotasing..... .... } C. P. R., from supposed change of agent.

These stations may probably resume.

Quebec.

Class II—

Quebec..... .....From death of Lt.-Col. Pope.

The stations in Ontario under Mr. Blue, and those in Manitoba under the Department of Agriculture of that Province, continue in the same efficient state as in the previous year, and some of both systems show an increased interest by voluntarily extending their work.

Storm Signal Service.

There were 1,500 warnings of approaching storms issued from October 1st, 1888, to the 30th November, 1889; 1,249, or 83·3 of which were verified.

Since the last report some notable storms have occurred; the first of which was on January 9th. On this day one of the greatest storms which has ever passed over any part of Canada took place over the Lake Region and about the St. Lawrence valley. From the neighbourhood of Texas and Indian Territory, where it was situated on the morning of the 8th, it travelled North-east with rapidly increasing energy. When over the Lake Region the barometer reduced to sea level was below 28·90 inches, and when over the Gulf below 28·80 inches. Destructive gales prevailed throughout Ontario and Quebec. The Niagara Suspension Bridge was blown down and great damage occurred in many localities; trees were uprooted and houses demolished. Navigation being closed no warnings were issued, except in the probabilities which gave full notice. Ample warning was sent to Eastern Canada, but the storm though general there, was not as severe as further West.

A developing depression over Lake Superior, on 17th September, caused from that date to the 20th, very stormy weather on the lakes, except Lake Superior. Three vessels were driven ashore in the neighbourhood of Kingston. Ample warning of this storm was sent to our lake stations.

A severe West Indian hurricane was off the middle Atlantic coast on the morning of the 10th September, moving Northward; all Eastern stations were warned; it, however suddenly came to a standstill. It caused great destruction along the middle Atlantic coast and dispersed there. No storm occurred in Canada.

A shallow depression which appeared at 8 a.m., on the 26th of November, over Northern Texas, afterwards developed great energy, passing over the Lower Lake Region on the 22nd, it moved South of the St. Lawrence valley and off our Atlantic coast.

During the early morning of the 27th, a heavy easterly gale set in over the Lower Lake Region, which eventually changed to a westerly gale. Throughout the St. Lawrence Valley and Maritime Provinces, the gale was severely felt from the Eastward on the 28th, especially in the former district. The gale was accompanied by the first heavy snowfall of the season, trains were considerably delayed, much damage was caused in the cities of Montreal and Quebec, and several vessels were wrecked on the lakes as well as on our Atlantic coast. Signals were ordered up for lake stations at 9.30 p.m.. on the 26th, and at all eastern stations the next morning. Several stations on the lakes received the warning late, owing to delay in telegraphic transmission; otherwise ample warning was given.

Storm signal stations were established at the following places, since last report: Point Escuminac, N.B., Canso, N.S., Ingonish, C.B., Souris, P.E.I., Pelee Island, Ontario.

The following shows the actual result:—

TABLE No. 1.

The following table shows the total number of warnings issued and the percentage verified.

Year.	No. Issued.	No. Verified	Percentage Verified.
1877	743	510	68·6
1878	860	673	78·3
1879	712	591	83·0
1880	889	736	82·8
1881	854	727	85·1
1882	841	658	78·2
1883	1,085	858	79·1
1884	798	663	83·2
1885	830	741	89·3
1886	906	799	88·2
1887	1,093	972	88·9
1888 (9 months) 1st January to 30th September	404	331	81·9
1888-89 (14 months) 1st October to 30th November	1,500	1,249	83.3

TABLE

NUMBER of Predictions and Percentage of fulfilment in each District,

MONTHS.	LOWER LAKE REGION.						UPPER ST. LAWRENCE.						LOWER ST. LAWRENCE.					
	Number issued.	Verified.					Number issued.	Verified.					Number issued.	Verified.				
		Number fully.	Number partly.	Number not.	Percentage fully.	Percentage fully and partly.		Number fully.	Number partly.	Number not.	Percentage fully.	Percentage fully and partly.		Number fully.	Number partly.	Number not.	Percentage fully.	Percentage fully and partly.
October	121	102	16	3	84·3	97·5	103	77	21	5	74·8	95·2	99	77	12	10	77·8	89·9
November	109	71	21	17	65·1	84·4	110	86	13	11	78·2	90·0	106	89	10	7	83·9	93·4
December	121	81	24	16	66·9	86·8	98	68	17	13	69·4	86·7	98	76	15	7	77·6	92·9
January	108	93	10	5	86·1	95·4	106	89	12	5	84·0	95·3	100	74	21	5	74·0	95·0
February	102	81	15	6	79·4	94·1	93	69	17	7	74·2	92·5	94	76	10	8	80·9	91·5
March	94	69	11	14	73·4	87·1	92	67	12	13	72·8	85·9	91	63	13	15	69·2	83·5
April	101	78	16	7	77·2	93·1	89	74	7	8	83·1	91·0	88	68	12	8	77·3	90·9
May	110	90	12	8	81·8	92·7	110	92	15	3	83·6	97·3	99	66	28	5	66·7	94·9
June	94	67	17	10	71·3	89·4	88	68	14	6	77·3	93·2	83	59	15	9	76·1	89·2
July	109	97	9	3	89·0	97·2	98	77	19	2	78·6	98·0	91	71	12	8	78·0	91·2
August	102	88	9	5	86·3	95·1	91	77	11	3	84·6	96·7	95	81	9	5	85·3	94·7
September	101	77	12	12	76·2	88·0	91	71	6	14	78·0	84·6	94	66	12	16	70·0	83·0
October	102	67	22	13	65·7	87·3	97	78	12	7	80·4	92·8	98	76	13	9	77·6	90·8
November	103	88	10	5	85·4	95·1	102	82	14	6	80·4	94·1	94	82	5	7	87·2	92·6
For 14 Months.	1477	1149	204	124	77·1	91·6	1368	1075	190	103	78·6	92·5	1330	1024	187	119	77·0	91·1

II.

in each Month, and in the Period October, 1888, to November, 1889, inclusive.

Gulf.						Maritime.						Total.					
	Verified.						Verified.						Verified.				
Number issued.	Number fully.	Number partly.	Number not.	Percentage fully.	Percentage fully and partly.	Number issued.	Number fully.	Number partly.	Number not.	Percentage fully.	Percentage fully and partly.	Number issued.	Number fully.	Number partly.	Number not.	Percentage fully.	Percentage fully and partly.
98	69	18	11	70·4	88·8	104	79	19	6	76·0	94·2	525	404	86	35	77·0	93·3
105	78	19	8	74·3	92·4	106	83	22	1	78·3	99·1	536	407	85	44	75·9	91·8
96	74	12	10	77·1	89·6	102	78	17	7	76·5	93·1	515	377	85	53	73·2	89·7
100	72	17	11	72·0	89·0	106	76	22	8	71·7	92·5	520	404	82	34	77·7	95·5
92	77	9	6	83·7	93·5	84	66	9	9	78·6	89·3	465	369	60	36	79·4	92·3
88	71	6	11	80·7	87·5	97	75	15	7	77·3	92·8	462	345	57	60	74·7	87·0
89	66	17	6	74·2	93·3	92	71	19	2	77·2	97·8	459	357	71	31	77·8	93·2
96	66	22	8	68·8	91·7	92	65	20	7	70·7	92·4	507	379	97	31	74·8	93·9
82	62	16	4	75·6	95·1	97	77	13	7	79·4	92·8	444	333	75	36	75·0	91·9
86	68	11	7	79·1	91·9	93	70	17	6	75·3	93·5	477	383	68	26	80·3	94·5
92	78	11	3	84·8	96·7	86	68	10	8	79·1	90·1	451	377	50	24	83·6	94·7
89	63	10	16	70·8	82·0	90	69	7	14	76·7	84·4	465	346	47	72	74·4	84·5
94	73	15	6	77·7	93·6	100	70	23	7	70·0	93·0	491	364	85	42	74·1	91·4
95	78	11	6	82·1	93·7	97	84	8	5	86·6	94 8	491	414	48	29	84·3	94·1
1302	995	194	113	76·4	91·3	1346	1031	221	94	76·6	93·0	6808	5259	996	553	77·2	91·9

Probability Service.

The signal discs carried on trains, showing expected weather, were displayed as usual from June to September, inclusive. In some instances, through mistakes on the part of the railway employees, the signals carried on the trains have not been those ordered from this office, but the number of wrong signals thus displayed is but a small proportion of the total number carried. The thanks of this office are due to the various railway companies which have co-operated with us in publishing the weather predictions in this manner.

Special predictions have been asked for as usual this season, by boards of trade and persons engaged in various occupations all over the country, and the Canadian storm-signal code has been eagerly sought for by captains of American vessels trading on the lakes. All the information which it was possible to supply has been promptly furnished to enquiring parties.

Manitoba and the North-West Territories have not yet been furnished with daily weather probabilities, but it is desirable that arrangements should be made that will enable me to give the above-named province and the North-West Territories this information.

Appended is Table 2, showing the number of predictions and percentage of verification in each district for the period comprised within this report.

Telegraph Signal Stations.

A telegraph reporting station has been established at White River, Ont., in charge of Mr. W. E. McLaughlin; this is the only alteration in these stations since the last report. I have to invite the attention of the Minister to the desirability of establishing stations of this class in British Columbia.

Central Office.

Since last report two of the staff have resigned—Messrs. F. Napier Denison and W. E. Davis. Mr. Denison was employed as assistant in the probability room, and Mr. Davis was engaged in the correspondence branch, being both a shorthand writer and an expert operator on the typewriter. These gentlemen were promising young officers, and it is much to be regretted that this office could not hold out sufficient inducements to retain their services.

Lieut. A. R. Gordon, R.N., has again been absent from this office during the summer and commencement of the fall in command of the squadron for the protection of the Canadian fisheries. During the winter of 1888 and 1889 Lieut. Gordon and Mr. F. L. Blake, D.L.S., of this service, compiled and drew a map of Canada.

This map has been prepared for the purpose of discussing the climatological statistics which have been collected by this service, and it is most desirable that this work should be proceeded with as soon as possible. There exists a considerable amount of valuable data in this office in reference to Canadian climate, the discussion of which will enable me to speak authoritatively on many points in regard to our climate on which at present I am uncertain.

The staff perform their duties satisfactorily and efficiently, and I hope that the question of granting them increased salaries and the benefits of superannuation, which at present I understand you have under consideration, may be granted them.

Time Service.

The method of performing this work, together with a table showing discordances at the different observatories will be found in the report on the Magnetic observatory.

The report on the St. John observatory forms Appendix "A."

The report on the Quebec observatory forms Appendix "B."

Chief Signal Officer.

Brigadier General Greely, Chief Signal Officer United States Signal Service, has continued courteously to interchange reports with this office, and has supplied all information asked for, for which I offer my hearty thanks.

Volunteer Observers.

This class of observer, renders most important service to this office; without their assistance it would be impossible to collate sufficient Meteorological data upon which to base reliable conclusions with regard to the climate of the country.

Several applications have been made for instruments by persons desirous of assisting the Service, of these some were accepted, others had to be rejected for various reasons, such as the presence of another observer in the immediate neighborhood, &c. The volunteer observers deserve the thanks of the whole community, for devoting their time gratuitously, for the benefit of the public.

Great North-Western Telegraph Co.

The several heads of the departments of this company in Toronto are entitled to the thanks of the Service, for the efficient manner in which they have carried out all matters in connection with this office, and for the promptness with which all reports of irregularities have been attended to.

Publications.

The Monthly Weather Review is published regularly, but unfortunately, is still about two months behind, the October number at the time of writing not having been received from the printers. The Annual Report of the Meteorological Service is also behind, the last issued being that for 1886. The printing of each report has of late years taken over a year, therefore the reports are becoming more and more behind.

About 700 Annual Reports and over 800 copies of the Monthly Weather Review are distributed as follows:—

Country.	Report.	Review.
Great Britain and Ireland	80	75
Norway	5	5
Sweden	4	4
Denmark	2	2
Netherlands	2	2
Belgium	3	3
France	11	10
Germany	21	20
Austria	18	18
Spain	1	1
Portugal	4	4
Russia	6	6
Roumania	1	1
Greece	1	1
Tasmania	1	1
Newfoundland	3	3
Canada	423	546
United States	60	62
Mexico	3	3
West Indies	4	4
Turkey	1	1
Switzerland	3	3
Italy	10	11
Sicily	1	1
India	9	12
Ceylon	3	3
China	1	1
Japan	3	2
Philippine Islands	1	1
East Indies	1	1
Mauritius	1	1
Cape of Good Hope	1	1
Australia	7	6
New Zealand	1	1
Costa Rica	2	2
Guatemala	1	1
Brazil	2	2
Uraguay	1	1
Argentine Republic	2	2
Chili	1	1

Library.

The number of publications received continues to increase each year and was 410 for the period comprised in this report, an increase of 186 over the fourteen months immediately preceding. These works treat almost entirely upon meteorology, astronomy, and terrestrial magnetism. Five new contributors have been added to the list of those with whom publications are regularly exchanged. The library being now filled to its utmost capacity, a small outlay will shortly be necessary to meet the required accommodation. A larger number of volumes of periodicals require to be bound, which will also necessitate a small outlay.

Inspection of Stations.

Forty-seven stations were inspected, being seventeen more than last year. Mr. Payne inspected eleven, Mr. Stupart eleven, and twenty-five were visited by Mr. Webber.

The reports of the Inspectors are given in the appendix and lettered respectively "C," "D" and "E."

The absolute necessity of systematic inspection is amply shown by reading these reports. Out of the forty-seven stations visited, the following imperfections were discovered:—Bad exposures, 9; instruments reading erroneously, 8; instruments worn out, that required repairing or cleaning, 13; or in all 30 instances, where, owing to one cause or another, defective work was being done and which would have continued had not inspection removed it. There were three stations where the observations had been entirely neglected, viz:—Collingwood, Ont., Cobourg, Ont., and Greenly Island, Lab. I hope to be able in future to have more inspection done annually, than has been the case in past years.

All of which is respectfully submitted.

CHARLES CARPMAEL, *Director.*

APPENDIX "A".

The Observatory,
St. John, N.B., December, 1889.

The Superintendent,
Meteorological Office, Toronto.

Sir,—I have the honor to submit my report of this Observatory for the year ending in December, 1889.

The meteorological observations have been taken and recorded as stated in former reports. Time observations with the transit instrument for determination of clock errors and rates, have been made as usual, and the daily time signal given to the shipping by dropping the time ball at 1 p.m. local time.

The time ball has been repaired and now works in a satisfactory manner; it was dismounted for nineteen days, from November 13th. During this time many parties called at the Observatory to correct their time.

Storm warning signals, when ordered up from Toronto, have been promptly displayed from the staff at signal station on Customs building. The lamps used for the night signal blow out with a strong breeze, and I would recommend that four incandescent electric lamps with storage batteries be used for the purpose.

The observatory is frequently visited by ship captains for the purpose of comparing their instruments with those in this observatory.

I have the honor to be, Sir,
Your obedient servant,
GEO. HUTCHINSON,
Observer.

APPENDIX "B."

METEROLOGICAL STATION AT THE QUEBEC OBSERVATORY,
QUEBEC, November 30th, 1889.

To the Director,
Meteorological Office, Toronto.

Sir,—I have the honor of submitting the following report of the Quebec Observatory for the past year.

The duties in connection with this Observatory have remained the same as in the past, and have been carried out under my immediate direction.

There were no failures of the "ball" this season, and such failures of the "noon" gun as occurred were beyond the responsibility of this Observatory, having been owing to mischances and neglect that were avoidable , as being under the control of the Citadel authorities.

I would again draw your attention to the necessity of improving the present system of "dropping" the time ball, as pointed out in my last report.

If the present system is to continue, the ball will require to be renewed, as the past season's work has so damaged it, that it would be more economical to renew than to repair it,

I have the honor to be, Sir,
Your obedient servant,
W. A. ASHE, F. R. A. S.

APPENDIX "C."

METEOROLOGICAL OFFICE,
TORONTO, December, 1889.

CHARLES CARPMÆL, Esq., M.A., F.R.A.S.,
Director.

SIR,—I have the honor to report that the following stations were inspected by me during the year.

Port Dalhousie, Ont., 3d April, 1889.—The signal mast which had blown down last fall, had broken short off, level with the ground. I ordered the old mast to be again used with ten feet spliced on; to be thoroughly repaired and placed in a new position, as the Canal Superintendent objected to its being too near his house; tenders according to specifications to be sent in for the work.

Midland, Ont., 3rd August, 1889.—Station in good order but the rain gauge was not well exposed; changed this to a better position. The signal mast on the wharf is poorly placed to be seen from the bay. It would be better seen if placed on the hill to the east of the town. Signals required minor repairs. They are much appreciated here and more attention is paid to them than ever by vessel men.

Parry Sound, Ont., 5th August, 1889.—Thoroughly tested all instruments, barometer, thermometer, anemometer, &c.; minimum, 5,385 was reading one degree too low, which was rectified. It was necessary to have the thermometer shed removed, as a new building had made its position worthless. The anemometer tower required whitewashing, and leading wires from anemometer, &c., replaced, and insulated. The telegraph wire line leading from the tower to the house, is in a delapidated condition. It will be necessary when line men are up there to have it put in proper repair.

Instructed the new storm Signal Agent in his duties.

The mast erected by the townspeople at their own expense is a good serviceable one. The signals were all in good order.

Bala, Ont., 9th August, 1889.—All the instruments were in good order and evidently care had been taken in observing. The observer consented to take readings of

maximum and minimum thermometers if sent to him. Exposure for wind is not good owing to surrounding bush.

Beatrice, Ont., 10th August, 1889.—The barometer required cleaning, which was done. Minimum thermometer No. (C) 265 was reading one degree too low. This was altered. Instruments were well taken care of, and observations faithfully attended to.

Maple Hill Farm, Joly, Muskoka, 13th August, 1889.—All instruments were in good order and well placed. Thermometers and rain gauge well exposed. Mr. Ambray is away and his son attends to the work, which is well and carefully done. The station is in the centre of a small clearing in the bush.

Uplands, Ont., 15th August, 1889.—All the instruments were placed in good positions and carefully looked after. The minimum thermometer No. (C) 905 was reading two degrees too low; this was altered. Observer takes much interest in his observations.

Gravenhurst, Ont., 17th August, 1889.—Instruments were well placed and in good order, except minimum 5148 which had 1.50 of detached spirit at the end of the tube; this was shaken down. The work is carefully done and the instruments well kept here.

Mr. Robinson wishes to have an anemometer, but the exposure is not good for one.

Collingwood, Ont., 20th August, 1889.—The agent was away and not attending to observations; he had made provision for having signals attended to, which were in good order. The usual complaint was made here, about smoking lamps, and the fact noted by the agent, that when a shorter chimney was used the difficulty was overcome. He could not obtain short chimneys but had managed to cut one down which acted well. This is apparently the cause of the numerous complaints of smoking lamps, as the necessary short chimneys are not easily procurable.

Owen Sound, Ont., 21st August, 1889.—The signals were in good order, but the lamps smoked; day signals chafed; to overcome this I had a leading block for the halliards placed so as to keep them clear of the signals.

Since the erection of the mast on the elevator, a new elevator built in front has partially hidden the signal mast from the bay.

Mr. McLean, the observer, lives outside the town and is painstaking in his work. I do not think the exposure very good. The place is surrounded by trees, but Mr. McLean's age did not justify me in moving the instruments far away from the building.

Tobermory, Ont., 27th August, 1889.—Delayed at Wiarton, waiting a chance to get up here. No observations had been taken except rainfall. Anemograph was not working, being out of order. The new observer knew little about the work. I fully instructed him in the use of the instruments, readjusted the anemograph and set it working. Rainfall had not been entered properly. Mast and signals all in good order; mast is well placed and a fine spar; same complaint made about smoking lamps.

Telegrams are often delayed owing to trouble with wire, which runs through the bush. There will also be a difficulty in keeping an observer here, as the place will be deserted during winter.

I have the honor to be, Sir, yours respectfully,

H. V. PAYNE,
Inspector.

APPENDIX "D."

METEOROLOGICAL OFFICE,
TORONTO, December, 1889.

CHARLES CARPMAEL, Esq.,
Meteorological Office, Toronto.

SIR,—I have the honor to submit the following report of stations inspected by me this year.

Coldwater, Ont., 14th November, 1889.—Mr. Lazonby will, in future, take regular barometric observations at 8 a.m. and 8 p.m.: his barometer agrees very closely with the observatory standard. The rain gauge has been placed on a post in the yard in rear of the house, and the position is now satisfactory. The spirit thermometer has been out of repair, but is now in good order.

Lennoxville, Que., 30th May, 1889.—Mr. Frith, of Bishop's College, is a most enthusiastic observer and does particularly good work. He will, in future, take barometric readings and promises to determine the difference in height between the Canadian Pacific Railway bench mark and his instrument. The rain gauge was much too close to a tree and an outhouse, but has been moved to a more suitable place.

Sydney, C.B., N.S., 6th June.—Everything is in good order at this station.

North Sydney, C.B., N.S., 6th June.—The storm signal mast at this station has been up many years and needed repairing. The following repairs were ordered: The posts to which stays are attached to be renewed; a new man rope; sundry repairs to signal house, and the mast to be painted.

St. George's Bay, N. Fld.—Captain Hirst, the observer at this place, lives at Sandy Point, a village on the sand bar which forms the harbour at the head of the Bay of St. George. The barometer is in the Upper hall of the house, in a fairly good light, 21 feet above mean sea level. The anemometer and windvane are on a platform seven feet above the ridge of the roof of the house, and are well exposed in all directions; between south-west and west-north-west the wind blows directly up the Bay, and in other directions there is either water or low land for some miles, The thermometer screen is attached to the north side of the house and the rain gauge is in a field some fifteen yards distant. The anemometer dial is read by means of a ladder, but I strongly recommend that Captain Hirst be supplied with an electric anemometer as with the present arrangement, during stormy weather, it will be almost impossible to take wind observations.

St. John's, N. Fld.—The observations at this station have, for some years, been taken at a small house, in a row near the centre of the city, the yard in connexion with the house is very small, and in consequence the exposure of the instruments has been very poor. The barometer hitherto in use is a poor instrument and reads 0·14 too high and in reducing readings to sea level a wrong height has been used, viz.: 159 feet instead of 126 feet.

Mr. Higgins was on the point of moving to a new house in the lower part of the city. I inspected his new quarters, which were not quite ready, and chose a place for the barometer in a lower room and a site for the thermometer shed and rain gauge in the garden. Ample instructions were given as to the removing of the new barometer to the other house. The barometer is now 49 feet above mean sea level.

There is no good site for an anemometer near the observer's house in St. John's, but Mr. Higgins can estimate velocities with fair accuracy.

A barometer sent to Mr. Higgins in care of the captain of one of the Allan steamers, two years ago, had a large amount of air in it. I cleaned and repaired it and subsequently left it at Quebec observatory.

Halifax, N.S., 25th June.—Comparisons of the different instruments showed everything in good order. The storm signal mast at the Citadel has been painted.

Pictou, N.S., 27th June.—Everything at the station is in good order. Mr. Campbell has been instructed to have the thermometer shed painted.

Chatham, N.B., 28th June.—Observer, Mr. James F. Connors, is apparently a very good man for the position, and does his work well. Comparison with the standard showed the barometer to be reading correctly. The thermometer shed is surrounded by buildings rather too closely, but is in the best position that can be obtained near the observer's house. No good exposure can conveniently be obtained for an anemometer. The instrument now in use is nearly worn out, and in its present position near the ridge of a low roof is quite useless.

Quebec, P.Q., 2nd July.—The instruments at the observatory are in good order. Mr. Ashe has had the mean time clock moved to his office where the temperature is more equable. He wants authority to pay cost of removal. He also wants diagonal eye piece for transit instrument.

The hourly series of temperature observations is continued at the Citadel, but I should judge that the series is not altogether trustworthy.

Saugeen, P.Q., September 11th.—The barometer at this place was very dirty and difficult to read. It is now clean and in a better light than heretofore. I would suggest that an electrical anemometer be supplied to this station as the exposure is very good.

Mr. Davis has the storm signals and mast in good order and continues to take much interest in the warnings, which he informs me are greatly appreciated at Saugeen.

R. F. STUPART,
Inspector.

APPENDIX "E."

Meteorological Office,
Toronto, December, 1889.

Charles Carpmael, Esq., M.A., F.R.A.S.,
Director of the Meteorological Service, Toronto.

Sir,—I have the honor to submit the following report of the stations in Canada, inspected by me since my last report.

Midland, Ont., 18th October, 1888.—The wooden cross arm of drum was broken, as was also the canvas, slightly; the necessary repairs were made. Mr. Henderson continues to attend to the Signal duty in the same conscientious manner in which he has always done. He, in addition, will for the future take rain fall observations; the gauge is to be placed in the garden adjoining Mr. Henderson's house. The storm warnings are reported to be highly appreciated here, vessels invariably staying in p rt when the signals are up.

Petrolia, Ont., 11th December, 1888.—Instructed Mr. Bell, the new head master of the High School, in the duties of observer. He did not appear, however, anxious to undertake the work, but the school trustees informed me that they insisted on its being attended to. The instruments were in good order except the barometer, which was both very dirty and had a considerable amount of air in it; this I rectified and left the station in good order.

Port Stanley, Ont., 12th December, 1888.—Found the barometer reading .018 lower than the standard, which gives a correction of +018, instead of .010 as formerly applied. The anemometer exposure becames worse annually owing to the growth of an adjoining large tree. A storm signal is still unnecessary here. Mr. Payne continues to perform the duties with attention.

London, Ont., 12th December, 1888.—The barometer needed cleaning, being very dirty; it was put in proper order. The exposure for thermometers has been much improved by the removal of adjoining sheds.

Point des Monts, P.Q., 14th July, 1889.—The rain gauge was poorly exposed. It has been removed to a more open position. Placed a barometer at this station and instructed the observer, but in the short time he had at his disposal it was imposs-

ible to make him thoroughly conversant with the instrument. Rainfall will be given in decimals in future.

West Point, Anticosti, P.Q., 16th July, 1889.—The instruments are all in good order and well exposed.

South-West Point, Anticosti, P.Q., 17th July, 1889.—Cleaned the barometer, substituting fresh mercury. The maximum thermometer was broken and useless. A large sized new pattern electrical anemometer will be in future used at this station. A new rain gauge replaces the wornout old one.

Heath Point, Anticosti, P.Q., 18th July, 1889.—A new vane was required at this station. The porcelain back of thermometer 2647 was destroyed, evidently by the action of salt air. Rainfall will be given in decimals in future.

Point Rich, Newfoundland, 19th July, 1889.—Found the instruments in good order, except the vane, which was broken. The rain gauge had been in use for six years, and was in capital condition. Rainfall will be read to decimals in future.

Greenly Island, Labrador, 19th July, 1889.—All the instruments were broken. Closed the station, as I did not consider Mr. Debeaumont capable of taking observations.

Porteau, Labrador, 20th July, 1889.—Instructed Mr. M. T. Wyatt in the duties of Observer, and recommend that this place be substituted for Greenly Island.

Belle Isle, P.Q., 21st July, 1889.—The Adie barometer in use was very sluggish, so I ordered that the spare Green barometer be used instead of it; this latter I cleaned thoroughly and left it reading precisely as the standard. A stronger platform will be erected for the anemometer, and the thermometer shed will be repainted. Mr. Colton has promised that more care will be given to the observations in future.

Cape Norman, P.Q., 24th July, 1889.—The vane has been blown away, otherwise everything was in good order. The rainfall will be given in decimals in future.

Father Point, P.Q., 2nd August, 1889.—Replaced the old downshaft anemometer at this station, by an electrical anemometer and vane, new pattern. It was found necessary to have a new platform erected to carry these instruments, as the old one was quite rotten.

Montreal, P.Q., 9th August, 1889.—The anemometer should be raised in order to clear the fans of windmill vane. Cleaned the barometers. The duties are performed here in a first-class manner.

Brockville, Ont., 10th August, 1889.—The instruments are particularly well exposed and in good condition, and Mr. Worthington is a very conscientious observer.

Kingston, Ont., 11th August, 1889.—The cog-wheel of the vane had become thrown out of adjustment, consequently the dial was not recording the direction of the wind. The barometer was excessively dirty, and required a thorough cleaning. The storm signal mast was in a very dilapidated condition; it will be properly stayed and painted. The anemometer exposure is quite useless, owing to surrounding high buildings; the exposures of the thermometers and rain gauge are also very poor.

Deseronto, Ont., 12th August, 1889.—Mr. Russell, editor of the *Tribune*, kindly attends to the observations here. The instruments are in good order and well exposed, except the anemometer, which is of little value. Deseronto, however, is almost entirely landlocked, and no good exposure is obtainable.

Picton, Ont., 12th August, 1889.—The storm signal mast and all appliances were in good order. Mr. Rawson has promised to give more attention to the storm reports in future.

Prinyer, Ont., 13th August, 1889.—The complaint about the signal lamps not burning was owing to the chimneys furnished being too long: this matter has been rectified. The mast and drum-house were much in need of repairs, which have since been made. A telephone should be placed in Mr. Prinyer's house; the nearest telegraph office is a mile and a half distant, and great delay is experienced in receiving warnings.

Trenton, Ont., 13th August, 1889.—The agent was anxious to remove the signal mast to his own grounds in the town. I consider, however, the present position on the wharf the best. A few necessary repairs to the mast were ordered to be made.

Mr. Clarke has the thermometers and rain gauge well exposed, but the anemometer exposure is very poor. No suitable exposure for an anemometer is procurable here, and, in fact, is not necessary.

Belleville, Ont., 14th August, 1889. Observer away from the town, and his house closed. Rain gauge was badly exposed.

Cobourg, Ont., 14th August, 1889.—The storm signal mast required staying and painting. No observations have ever been taken at the College here, and there are several instruments belonging to the service that should be returned.

Port Hope, Ont., 14th August, 1889.—Everything was in good order here, but it was considered advisable to have the signal mast painted white, in order that it might be better seen from the lake.

Pelee Island, Ont., 5th October, 1889.—Contracted for the erection of a storm signal mast, and instructed Mr. Quick in the duties that would be required of him. The anemometer is placed on top of the lighthouse, and the wires run to the anemograph in observer's dwelling. This promises to be one of the best wind exposures in Canada, and the records will undoubtedly be of great value for the verification of warnings on Lake Erie. The warnings will also in all likelihood be of great use to the immense amount of shipping that passes close to the lighthouse. If prompt despatch is to be given to the warnings, it will cost but little to make this extension, and in the long run will be much more economical than paying fifty cents a message for delivery. The position of thermometer shed and rain gauge were very poor. Good exposures have now been selected, and maximum and minimum thermometers will in future be used.

Whilst at Pelee Island, I subjected one of the signal lamps to the following severe test, the result being highly satisfactory. It was suspended from a slim branch of a small tree, in a most exposed position, during a very heavy gale of wind. At the expiration of twenty hours the lamp was burning as brightly as when first lighted. The lighthouse keeper, who has had to do with lamps since boyhood, said it was the finest lantern he had ever seen.

Before closing my report, I respectfully beg to call your attention to the necessity of establishing a wind station on the False Ducks, on Lake Ontario, or thereabouts. At present we have scarcely any means of verifying warnings when issued to the land-locked ports of Prinyer, Picton, Trenton and Deseronto.

I have the honor to be, Sir,
Yours very respectfully,
B. C. WEBBER,
Inspector.

APPENDIX "F."

KINGSTON OBSERVATORY,
KINGSTON, 3rd December, 1889.

SIR,—I beg leave to submit, for the information of the Minister of Marine and Fisheries, the report of the Kingston Observatory for the year 1888-89.

Since last report, the usual observations, and others of more special interest, have been made from day to day throughout the year. The stability of the transit supports and its adjustments has again been thoroughly tested with the same satisfactory results as formerly. The steadiness of the pier of the sidereal clock, however, is not yet so complete. In heavy gales of wind to which the building is exposed, it is found to be subject to a slight tremor, which, for the time, affects the usually regular and equable rate of the clock. This will be remedied next summer by cutting off the connection of the pier with the surrounding ground, and enclosing it, like the piers of the transit, within a wall of brick laid in cement.

Some small repairs have been made in the shutters of the transit room, and next year the observer's room will be heated by a steam coil from an adjoining building instead of by a stove.

The equatoreal and dome continue to be in good working order. A. McLean's star spectroscope has been added to its equipment, and a number of valuable additions have been made to the library by donation and by purchase.

I have the honor to be, Sir,
Your most obedient servant,
JAS. WILLIAMSON,
Director of the Observatory.

WILLIAM SMITH, Esq.,
Deputy Minister of Marine,
Ottawa.

APPENDIX "G."

REPORT ON THE McGILL COLLEGE OBSERVATORY, MONTREAL, FOR THE YEAR ENDING 31ST, DECEMBER 1889.

WM. SMITH, Esq..
Deputy Minister of Marine,
Ottawa.

MONTREAL, December, 1889.

SIR,—I have the honour to present the report of this observatory for the year now closed, being my sixteenth annual report.

Meteorological Observations.

The usual meteorological observations, as particularized in my report for 1888, have been carried forward without interruption throughout the year. Appended hereto is a summary of the observations of the year. The daily results, as also the monthly and yearly summaries, have been published in the Montreal *Gazette*. The monthly and yearly summaries have also, since the beginning of the year, by arrangement with the Natural History Society, been published in the *Canadian Record of Science*.

Time Service

Determinations of clock errors have been made by the observation of 729 star transits on 139 nights, and by one solar observation. The character of these observations, and the methods employed, have been briefly specified in former reports. The noon time-ball for the use of shipping has been regularly dropped, on week days, during the season of navigation. Time signals have also been transmitted, continuously, throughout the year, to the various corporations and public institutions enumerated in my report of last year. Exchanges of clock signals with the Toronto Observatory were made on fifteen nights. The corrected averages of the differences between the mean time clocks of the two observatories is 0·s22, and the greatest difference on any one night was 0·s56. The comparisons for the year show that the probable error of the time given by one observatory, as compared with that given by the other, is 0·s20. The exchanges on ten nights were found to be favourable to the measurement of "wave-time," and give a mean result for the year of 0·s015 + 0·s002. This result, combined with the two previous years, gives a mean result of 0·s021 + 0·s001 as the wave-time over 335 miles of No. 10 iron wire under the conditions of an ordinary telegraph line.

In accordance with your instructions, I examined the condition of the time service to the Parliament Buildings, Ottawa, and reported thereon under date 12th January last, making recommendations with a view to its improvement. You were pleased to approve of the proposed changes; and, acting under your instruction, I visited Ottawa on the 9th of September to direct the work. The tower-clock was found to have met with injury in its striking portion since my previous

examination. This damage was repaired, and the clock taken down and thoroughly cleaned and re-mounted. It should now, if carefully regulated, be keeping excellent time. Owing to difficulty in obtaining the necessary telegraphic connections between the clock-tower and the time-gun, I found it impossible to completely carry out your instructions, at that time. It is hoped that this difficulty will shortly be removed, permitting a much needed reform in the Government time service to be effected.

Sunspots.

All the spots visible on the sun, during the year, were observed by projection on a screen attached to the "Blackman telescope." The heliographic latitude and longitude of each spot, at the time of observation, and also the areas of the spots, have been determined with approximate accuracy. A summary of the results of these observations is presented herewith. Several photographs of the sun's disc were obtained by the photoheliograph, during the months of July and August, when there was the greatest amount of solar disturbance.

Soil Temperatures.

The apparatus described in my report for last year for the observation of the temperature of the soil, at various depths, has been in use throughout the year, and has recently been improved in its action by the substitution of a mercurial switch-board, of my own design, for the ordinary metal contact switch previously employed. The observations of the past year will shortly be reduced and the results published in the "Record of Science."

GENERAL.

The usual attention has been given to inquiries on scientific subjects by the public.

I have the honor to be, Sir,
Your obedient servant,

C. H. McLEOD,
Superintendent McGill College Observatory.

MONTREAL, 1st January, 1890.

SUNSPOTS for the Year 1889, observed by projection on "Thompson's Discs," 8 inches in diameter. Aperture of Telescope, 6 inches.

Date of Commencement of each Rotation of the Sun.	No. of days on which observations were made.	Total number of new Spots observed.	No. of new Groups.	Average distance from the Equator.	Average number of Spots per day.	New Spots to North of the Equator.		New Spots to South of the Equator.	
						Number.	Average heliographic latitude.	Number.	Average heliographic latitude.
				°			°		°
Jan. 1 to Jan. 11·2	1	0	0	.....	0·0	0	.....	0	.....
Jan. 11·2	11	14	4	4·3	2·2	14	4·3	0	.....
Feb. 7·5	16	10	2	11·1	2·1	0	.....	10	11·1
March 6·8	11	15	5	4·3	2·5	5	3·5	10	5·5
April 3·1	18	7	3	3·4	0·8	3	3·5	4	3·0
May 0·4	11	10	1	4·7	1·4	0	.....	10	4·7
May 27·6	12	20	2	4·0	5·7	0	.....	20	4·0
June 23·8	15	19	3	7·2	4·8	0	.....	19	7·4
July 21·0	19	67	8	12·8	10·0	14	3·5	53	13·6
Aug. 17·2	23	2	1	18·9	0·6	0	.....	2	18·9
Sept. 13·5	8	10	2	21·0	2·4	0	.....	10	21·0
Oct. 10·8	18	10	2	19·6	0·6	10	19·6	0	.....
Nov. 7·1	0	0	0	.....	0·0	0	.....	0	.....
Dec. 4·4 to Dec. 31	9	23	5	21·2	3·3	9	20·0	14	22·0
Year 1889	172	207	38	11·2	2·9	55	9·3	15·2	11·3

The dates given in the first column, except 1st January, and 31st December, correspond with the coincidence of the assumed prime meridian of the sun, with the central meridian, as defined in the "Observatory" ephemeris. The numbers in the sixth column are obtained by dividing the total number of single spot observations in a rotation by the number of days on which observations were made during the rotation.

A large spot, first observed near the eastern limit on 17th June (whole area about $\frac{450}{1000000}$ and numbra about $\frac{60}{1000000}$ of the sun's hemisphere) made one complete revolution, and was observed until it disappeared beyond the western limit on 24th July. It did not greatly alter in form or area while visible. On its second appearance this group has been counted as "new." A small spot (area about 5 units) was observed in latitude S. 39, on 30th June.

"APPENDIX

METEOROLOGICAL ABSTRACT

OBSERVATIONS MADE AT McGILL COLLEGE

Height above sea level, 187 feet. Latitude, N.

Month.	Thermometer.					* Barometer.				† Mean pressure of vapour.	‡ Mean relative humidity.
	Mean.	¶ Deviation from 15 year means.	Maximum	Minimum.	Mean daily range.	Mean.	Maximum	Minimum.	Mean daily range.		
January	21·23	+ 9·64	44·0	— 6·5	11·9	29·9560	30·708	29·064	·298	·1038	82·5
February	10·59	— 4·65	39·5	—22·6	17·5	30·0410	30·885	29·222	·287	·0638	80·9
March	28·70	+ 5·01	43·9	7·8	12·2	29·8885	30·503	28·982	·178	·1224	75·3
April	43·34	+ 3·76	73·6	23·8	16.8	29·9554	30·499	29·277	·179	·1916	65·0
May	56·95	+ 2·17	88·0	35·3	17·7	29·8839	30·216	29·531	·146	·3338	69·5
June	62·91	— 1·55	84·9	45·1	16·1	29·9194	30·423	29·488	·180	·4286	73·9
July	64·97	— 1·05	87·5	52·3	16·0	29·9286	30·247	29·582	·131	·5165	74·9
August	61·97	— 2·13	81·1	50·1	14·8	30·0049	30·329	29·668	·118	·4681	75·8
September	59·93	+ 1·37	82·1	37·7	15·6	29·9835	30·370	29·281	·142	·4197	79·2
October	40·15	— 4·85	61·1	21·8	11·6	30·0384	30·605	29·393	·182	·1888	74·3
November	34·29	+ 2·21	55·0	13·7	10·1	30·0118	30·611	29·315	·244	·1686	81·2
December	23·79	+ 4·76	31·5	16·1	15·4	30·1133	30·889	29·036	·322	·1159	80·2
Sums for 1889											
Means for 1889	42·90	+ 1·22			14·6	29·9687			·201	·2601	76·1
Means for 15 years ending Dec. 31, 1889	41·67					29·9756				·2497	74·4

* Barometer readings reduced to 32° Fahr., and to sea level. † Inches of mercury. ‡ Saturation 100.
than the average for 15 years, inclusive of 1889. The monthly means are derived from readings taken every
summit of Mount Royal, 57 feet above the ground and 810 feet above sea level.

The greatest heat was 88·0 on May 18th; greatest cold 22·6 below zero on February 4th; extreme
January 30th; least range was 3·4 on January 7th. The warmest day was May 18th, when the mean
below zero. The highest barometer reading was 30·889 on December 31st; the lowest was 28·982 on March
mileage of wind in one hour was 70 on Dec. 30th, and the greatest velocity in gusts was at the rate of 150
of wind was 134,829. The resultant direction of the wind for the year was S. 69° W., and the resultant
storms on 17 days. Lunar halos on 8 nights. Lunar coronas on 5 nights. Solar halos on 8 days, and
snowfall of the autumn was on October 28th. The first sleighing of the winter was on November 28th.

NOTE.—The yearly means, above, are the averages of the monthly means, except for the velocity of

H."

FOR THE YEAR 1889.

OBSERVATORY, MONTREAL, CANADA.

45° 30′ 17″. Longitude 4h. 54m. 18·55s. W.

Mean dew point.	Wind. Resultant direction.	Wind. Mean velocity in miles per hour.	Sky clouded, per cent.	Per cent., possible bright sunshine.	Inches of rain.	Number of days on which rain fell.	Inches of snow.	Number of days on which snow fell.	Inches of rain and snow melted.	Number of days on which rain and snow fell.	Number of days on which rain or snow fell.	Month.
16·6	S. 70° W.	18·5	67·3	30·5	1·88	7	40·5	19	4·67	4	22	January.
5·6	S. 65° W.	18·9	64·5	43·6	0·30	2	32·3	16	3·33	.....	18	February.
21·6	S. 85° W.	17·4	63·2	40·0	0·62	9	15·3	12	2·11	6	15	March.
31·3	S. 72° W.	14·5	54·8	53·0	2·14	11	0·1	2	2·15	.....	13	April.
46·3	S. 43° W.	15·8	65·2	54·1	2·97	16	.....	....	2·97	.....	16	May.
53·8	S. 57° W.	13·8	71·1	45·5	4·73	20	....	....	4·73	.....	20	June.
59·2	S. 51° W.	12·5	63·6	50·3	7·16	20	...	....	7·16	.....	20	July.
56·7	S. 54° W.	12·4	59·6	59·0	2·73	13	.....	....	2·73	.....	13	August.
52·9	S. 30° W.	12·4	62·1	45·0	4·63	14	.....	....	4·63	.....	14	September.
32·0	N. 17° W.	13·7	63·1	36·6	3·34	12	0·8	1	3·42	1	12	October.
28·9	N. 76° W.	16·7	76·1	30·5	1·68	14	15·6	6	3·29	2	18	November.
18·5	W.	18·2	68·8	30·1	3·19	11	13·2	14	4·39	3	22	December.
.....	.....	.....	.....	.....	35·37	149	117·7	70	45·58	16	203	Sums for 1889.
35·3	S. 69° W.	15·39	65·0	43·2	.....	....	.....	....	3·80	.....	169	Means for 1889.
.....	.....	.....	61·4	§ 46·0	27·74	133	125·3	84	40·05	15	202	Means for 15 years ending Dec. 31, 1889

§ For 8 years only. ¶ "+" Indicates that the temperature has been *higher;* "—" that it has been *lower*
4th hour, beginning with 3h. 0m. Eastern standard time. The anemometer and wind vane are on the

range of temperature was therefore 110°·6. Greatest range of the thermometer in one day was 39°·8 on
temperature was 77°·82. The coldest day was February 23rd, when the mean temperature was 10°·73
7th, giving a range of 1·907 for the year. The lowest relative humidity was 15 on April 15th. The greatest
miles per hour for 5 miles, on Dec. 30th. (This is the greatest velocity on our records.) The total mileage
mileage 47,950. Auroras were observed on 16 nights. Fogs on 42 days. Hoar frost on 30 days. Thunder
contact arc on 1 day. The sleighing of the winter closed in the city on March 26th. The first appreciable

the wind.

" APPENDIX H."

REPORT OF THE MAGNETIC OBSERVATORY.

MAGNETIC OBSERVATORY, TORONTO, 26th December, 1889.

The Honourable
The Minister of Marine and Fisheries,
Ottawa.

SIR,—I have the honor to submit herewith report from the 1st of October, 1888, to the 30th of November, 1889.

During the year the regular routine magnetical and meterological observations have been carried on as formerly, and the self recording magnetographs have been kept in operation. as likewise have the barograph, thermograph and other self-recording instruments. The hourly readings of the traces from these instruments have been recorded, and for each month, daily and hourly averages have been obtained.

The extension of electric lighting in the city has brought two of the circuits within a distance of a little over five hundred yards of the observatory. The current at this distance affects the vertical force magnetometer, causing a break in the photographic trace at the times of turn-on and turn-off of the light. The total effect is, however, not sufficiently large to allow the small variations which may occur in the current to have any perceptible influence, so that the records can be reduced to what they would be in the absence of the electric circuit by applying a constant correction to all readings at times when the lights are on.

A very considerable addition to the school of Practical Science, which is just outside the observatory grounds is being made. A large amount of iron is being used in the construction, and it will be necessary for me to undertake a series of observations during the ensuing year to determine the amount of influence of this iron on the instruments in the observatory.

The time exchanges with Montreal, Quebec, and St. John have all been registered on the chronograph at Toronto, the comparisons taking place as usual, during the evening, when direct telegraph communication with the different observatories can more easily be obtained.

The errors of the Toronto clock, and of the timepieces used by the observers elsewhere, are computed from the latest observations.

The examination of the clock and chronometer comparisons and transit observations, sent in from the observatories at Quebec and St. John, has been performed.

The time at this observatory was obtained from observations of stars made at short intervals. The position of the stars as given in the "Berliner Yahrbuch," have been used in the reductions.

The collimation error of the transit instrument has been determined frequently from micrometrical measurements on the collimating telescope.

The mean time clock, which has never in the past performed satisfactorily, has been recently thoroughly overhauled; various defects were detected and remedied, and judging from the performance of the clock during the last three months, it would seem that it is now a good instrument.

TIME SERVICE.

The time exchanges between the various observatories and Toronto have been carried on as usual.

The following table shows the difference between the time by "Standard Observer"* and that given at the various exchanges. The sign + indicates that the time as sent from the different observatories is faster than that by "Standard Observer."

——	Toronto.	Montreal.	Quebec.	St. John, N.B.
1888.	Secs.	Secs.	Secs.	Secs.
October 23rd	+ 0·12	— 0·12	— 0·27	+ 0·56
November 14th	— 0·16	+ 0·16	+ 0·21	+ 0·65
December 7th	— 0·46	+ 0·46	+ 0·28	+ 0·35
1889.				
January 25th	+ 0·01	— 0·01	+ 0·93	+ 0·43
February 20th	— 0·21	+ 0·21	— 0·54	+ 1·28
March 20th	+ 0·06	— 0·06	— 0·50	+ 0·22
April 12th	+ 0·15	— 0·15	+ 3·47	— 1·10
May 7th	— 0.20	+ 0·20	— 0·26	+ 1·19
do 21st	— 0·35	+ 0·35	.....	+ 9·45
June 4th	— 0·11	+ 0·11	+ 2·82	— 2·22
do 27th	— 0·16	+ 0·16	+ 0·72	.....
July 18th	+ 0·01	— 0·01	+ 1·31	.....
August 27th	— 0·05	+ 0·05	— 0·68	— 0·36
September 20th	— 0·11	+ 0·11	— 0·51	+ 0·35
October 10th	— 0·13	+ 0·13	— 0·54	+ 0·93

*The time by standard observer is obtained by taking the arithmetical mean of the times as determined at Toronto and Montreal after applying the personal equations between the observers and the Director of the Magnetic Observatory, whose absolute equation is known to be almost insensible.

All of which is respectfully submitted.

CHARLES CARPMAEL,
Director.

APPENDIX No. 3.

REPORT OF THE CHAIRMAN OF THE BOARD OF STEAMBOAT INSPECTION FOR THE YEAR 1889.

SUPERVISING INSPECTOR'S OFFICE
TORONTO, 31st December, 1889.

Hon. CHARLES H. TUPPER,
Minister of Marine and Fisheries,
Ottawa.

SIR,—I have the honour to submit herewith my annual report for the year ending the 31st December, 1889.

Table A,—Shows the number of steamers in each inspection division, and the total number of steamers in the Dominion, with their gross tons.

Table B,—Shows the amount of dues and fees collected.

Table C,—Shows the increase in number of steamers, gross tons, and inspection dues and fees in 1889 over1888.

Table D,—Shows the number of steamers added in such inspection division, and to the Dominion, with their gross and registered tonnage.

A quorum of the Board examined engineers at Sarnia on the 20th, 21st and 22nd February.

The Board met at Toronto on the 22nd and 23rd of October, and examined Mr. James Johnson, of Owen Sound, for the position of inspector of boilers and machinery of steamboats, under the Act 49 Vic., chap. 78, for the western district of Ontario, made vacant by the retirement of Mr. Samuel Risley, the Chairman, and my appointment to his position as Chairman. Mr. Johnson passed the examination and was appointed an inspector of boilers and machinery of steamboats for the western district of Ontario, by Order in Council dated the 27th November.

A quorum of the Board met at Toronto on the 18th November to pass upon examinations of engineers held by inspectors in other districts, the results being duly forwarded to the Department.

Under the provisions of chap. 23 of the Acts 52 Vic. (1889), regulations for the inspection of boilers of steamboats were made by Order in Council dated at Ottawa the 17th day of September, 1889.

These regulations are well received and approved of, by the owners of steamboats, and makers of their boilers and machinery, although tending to to greater cost of construction, and requiring more expensive plant in the shops for the construction of boilers.

Complaints are made of the qualification "of service" being too high for second-class engineers' certificates, as compared with the qualifications for the same grade required by the Board of Trade of the United Kingdom. Complaints are also made of the area of safety valves required on boilers under provisions of sections 21 and 22 of the Act 45 Vic., chap. 78, being greater than is necessary, and greater than is the practice in the United Kingdom and in the United States. I have therefore recommended to the Department to replace sections 44, and 21 and 22 of the Act 49 Vic., chap. 78, by regulations made by Order in Council.

CASUALTIES.

West Ontario and Huron Division.

The steamer "Myles'" boiler burned on 17th April, through the check valve leaking. The vessel was just ready to sail on her first trip.

The yacht "Zephyr" ran on a rock in the St. Lawrence River and sank on the 9th August. She was raised and repaired.

The tug "F. A. Folger" was burned in the St. Clair River 8th September.

The steamer "Baltic" broke her shaft 9th October; the broken part is being replaced by a new piece.

One of the crew of the "Baltic", tarred and feathered by others of the crew, while on her voyage, in the month of September, is supposed to have suddenly become insane, as he jumped overboard and was drowned. Six of the persons concerned in the outrage were tried at Owen Sound, convicted and sentenced—two to one year, the others to six months each, imprisonment.

The tug "Annie Watt" was burned at Wingfield Basin, Georgian Bay, on the 8th November, and is a total loss.

The steamship "Algonquin," of Glasgow, Scotland, 1,805·61 gross tons, built 1888, at Yoker, Scotland, and employed in the carriage of freight on the great lakes; was disabled on the 10th August by the partial collapsing of the furnaces, of which there are six, of the Brown pattern. Six new furnaces of Cox's corrugated pattern were put in, and the vessel commenced running again on the 14th of October.

The steamship "Rosedale," of Sunderland, England, 1,040·49 gross tons, and employed in the carriage of freight on the great lakes, grounded in the Sault St. Marie River on the 17th November, and although a hole was made in her bottom, forward of her collision bulkhead, she carried her cargo of grain undamaged to Midland with her forward compartment full of water.

East Ontario Division.

The barge "Bavaria" broke loose from the tug steamer "D. D. Calvin" during a storm on Lake Ontario on 28th May. The crew of the "Bavaria," eight in number, were lost.

The side-wheel steamer "Rothesay" and the screw tug "Myra" collided on 12th September, near Prescott, on the St. Lawrence. Both vessels sank, and two of the crew of the "Myra" were drowned. The vessels were not a total loss.

The steamer "Armenia" collided with the American steamer "Pontiac" on Lake St. Clair. The "Armenia" sank, but was raised on the 26th of September and repaired.

The passenger paddle steamer "Quinté," on her route from Deseronto to Picton, on the 23rd of October, caught fire and was burned. The vessel was a total loss. Five lives were lost by this casualty.

Montreal Division.

There has been no casualty involving the loss of life in the Montreal division. The steamship "Powerful," about the end of November, ran aground at the foot of St. Helen's Island during a snow storm, and is still ashore.

Quebec Division.

The tug steamer "L. N. G.," on the 15th June, off Sillery Point, in attempting to cross the bows of the passenger steamer "Montreal," took a heavy list, filled and sank, taking down with her and drowning a young woman who was in the wheel-house.

The shaft of the paddle passenger steamer "Pilgrim," which was of cast iron, broke on the 23d of June. A new shaft of wrought iron was fitted in place of it.

The paddle steamer "Miramichi," when coming up the St. Lawrence on the the 1st of August, ran on a rock between Pie Island and the mainland. She came off with the flood tide, with her keel and a few of her floor frames bent.

Maritime Provinces Division.

The furnace tops of the steamer "Neilson," of Chatham, N. B., on the 21st June were found partly collapsed, caused by too free use of oil through her cylinders.

The steamship "Alpha," of Yarmouth, N.S., on the 9th November lost her screw by the shaft breaking outside of stern bearing, when near Yarmouth. She was towed into Yarmouth and fitted with a new shaft and screw.

British Columbia Division.

The steamship "Sardonyx" ran on a rock in the Skeena River on the 19th of April and had a hole knocked in her bottom. She was docked at Esquimalt on the 29th April and repaired.

The walking beam of the engine of steamship "Amelia" broke on the 29th April and made a general smash-up of the engine. She is now undergoing repairs.

The upper works of the steamship "Transit Mills" were burned at Port Moody on 10th May. She is to be repaired.

The steamship "Pilot" lost her screw on the 2nd June.

The steamship "Mamie" broke her screw rudder and rudder post by grounding when coming out of False Creek.

The steamship "Badger," on 8th July, caught fire in the cabin. Cause not known; the damage was repaired.

The steamship "Rustler," on November 27th, grounded on Nelson's Island, B.C. She was abandoned, her back being broken.

Manitoba Division.

The annual returns from this division are not yet received, and the list of steam vessels inspected, and also those not inspected, were supplied from data already in this office.

I have the honour to be, Sir,
Your most obedient servant,

W. J. MENEILLEY,
Chairman Board of Steamboat Inspection.

A.—Number and Gross Tonnage of Steam Vessels in the Dominion during the Year ending 31st December, 1889.

Divisions.	Number of Steamers.	Gross Tonnage.
West Ontario and Huron	331	62,316·64
Kingston	131	15,840·25
Montreal	146	19,532·00
Quebec	147	42,503·00
Maritime Provinces	183	34,222·14
Manitoba, Keewatin and North-West Territories	47	5,353·00
British Columbia	100	17,130·98
Total	1,085	196,808·01

B.—Dues and Fees collected on account of Steamboat Inspection during the Year ending 31st December, 1889.

Divisions.	Amount.
	$ cts.
West Ontario and Huron	4,264 86
Kingston	1,326 76
Montreal	1,499 08
Quebec	2,337 12
Maritime Provinces	1,779 22
Manitoba, Keewatin and North-West Territories	186 35
British Columbia	1,558 88
Total	12,952 27

C.—Number of Steam Vessels and their Gross Tonnage, and amount of Tonnage Dues and Inspection Fees collected during the Years 1888 and 1889, ending 31st December.

Years.	Number of Steamers.	Gross Tonnage.	Inspection Dues and Fees.
			$ cts.
1889	1,085	196,898·01	12,952 27
1888	1,014	175,985·04	11,868 59
Increase	71	20,912·97	1,083 68

D.—Steam Vessels added to the Dominion during the Year ending 31st December, 1889.

Divisions.	Number of Vessels.	Gross Tons.	Registered Tons.
West Ontario and Huron	26	4,282·67	2,606·55
Kingston	13	319·38	203·74
Montreal	13	1,676·32	984·13
Quebec	9	2,176·13	1,284·31
Maritime Provinces	23	5,579·27	2,775·62
*Manitoba, Keewatin and North-West Territories			
British Columbia	11	2,861·05	1,320 88
Total			

*None reported.

APPENDIX No. 4.

REPORT ON GEORGIAN BAY SURVEY FOR THE SEASON OF 1889.

GEORGIAN BAY SURVEY,
OTTAWA, November 4th, 1889.

The Honorable
The Minister of Marine and Fisheries.

SIR,—I have the honor to inform you that the winter of 1888-89 was fully occupied in preparing for transmission to the Hydrographer, in London, England, to be engraved, copies of the work of the previous summer. These two charts were "Cabot Head to Cape Rich" and "Collingwood and its approaches." These charts will probably be available to the lake mariner by the next opening of navigation.

I left Owen Sound last spring on the 6th of May, and proceeded, with one assistant, to the north-east shore of Georgian Bay, to extend the survey south-eastward from Byng Inlet, where the work stopped in 1886.

Mr. Stewart, my first assistant, left Owen Sound on the 7th of May, with his boat, crew and camp, in passenger steamer, for St. Joseph Island, to make a survey of the waters separating the latter from the main land of Algoma, and known as St. Joseph's Channel.

Were the "Bayfield" large enough to accommodate three boats' crews, instead of only two, it would be more economical and convenient to keep the whole party together.

On the passage across the bay in the "Bayfield," a bottom temperature was taken on the 6th of May at a position E.S.E., 3 miles from the south end of Griffith's Island. Several bottom temperatures had been taken in the latter part of previous summers, giving about 39 degrees Fahrenheit, but till now there had not been a favorable opportunity to get a satisfactory bottom temperature at a time when it might be considered at the minimum. The bottom temperature, in a depth of 59 fathoms, was found to be 35·5 F., while that of the surface was 35 F. This thermometer, by Casella, has been tested at the Observatory, Toronto, and found to be correct. This unlooked-for low temperature of the bottom would seem to point to a movement of the bottom water by either convection from the surface. or by horizontal circulation.

Had a higher temperature existed in this water, it should have been at the bottom, being the heavier water as far as 39 F, but as the thermometer was allowed to remain at the bottom 20 minutes by watch, and no higher temperature than 35·5 F. was recorded by the maximum, the inference is that no higher temperature existed.

The survey of the north-east shore of Georgian Bay was carried on between Byng Inlet and the Limestone Islands until the 4th of September, when sufficient being done—added to the work of 1886—to fill the hydrographer's projected chart of that portion of Georgian Bay, and the season on that exposed shore being too far advanced to admit of opening up new work, this coast was vacated for the more sheltered waters of the western part of the North Channel of Lake Huron, which were reached on the 8th following.

During the four months on the north-east shore, several new dangers were discovered, notably, a bank with only 9 feet of water over it, lying in the track of ships, and four miles distant from the nearest island, showing the necessity of these waters being sounded without delay. Work on this portion of Georgian Bay must necessarily be slow, for a more broken up coast line it is impossible to conceive, and the same up-and-down character of the bottom is extended to sea for two or three miles in the shape of many dangers very hard to find by the ordinary methods of hydro-

graphical surveying. On running a line of soundings from and at right angles to most coasts, the depths increase gradually and regularly, and the few suspicious casts of the lead do not take long to examine, till the shoalest spot is found, but to examine every inequality of the kind on the north-east shore of Georgian Bay would mean an interminable time and expense. The only safe way of navigating a coast of this exceptionable character is to adhere exactly to the leading marks given on the charts and sailing directions, and not to make too free with this uneven bottom, though the chart may shew more than sufficient water.

Sounding in the dark waters of the north-east coast of Georgian Bay, where a rock with only 6 feet of water on it cannot, at times, be seen, is only groping about in the dark at the best, and although our lines are sometimes only 100 yards apart—not a great distance, when the enormous expanse of the lakes yet unexamined is considered—it sometimes happens that no indication of a rock is given with the lead. I mention this fact to show that hydrographical work cannot be hurried excepting at the risk of leaving out dangers, entailing the loss of the reputation of the officer in charge and perhaps of valuable lives.

The usually best months, May and June, were stormy, and there was scarcely a day on which, at some time, the wind was not blowing on the shore, sometimes light, generally fresh, making in a very short time too much sea for satisfactory work in small open boats. With these impediments, two boats sounded 580 nautical lineal, miles and the steamer 520. It is customary to give the miles of coast line sketched also, but the broken-up character of the shore prevents any estimate being formed.

Having completed from Byng Inlet to McCoy's Island—the name given to the western and largest of the Indian Islands on the old chart—I proceeded on the 4th of September to Owen Sound, calling at Collingwood to witness the working of the recent change in the color of the Nottawasaga Island light. Having completed coaling at Owen Sound, the village of Bruce Mines, Algoma, was reached on the 8th September and I found that Mr. Stewart—who, as previously mentioned, had been detached all summer—had nearly completed the survey of St. Joseph's channel from Bruce Mines to Sugar Island of the United States. There is sufficient water in this passage for the largest vessels on the lakes, but owing to the number of sunken rocks, some very small, and entailing a long search in their discovery—great care is required in its navigation. For this reason it is rarely used at night, but with range lights there should be no difficulty in doing so. This channel is important as being the most direct route to Sault Ste. Marie, and Lake Superior from the northern part of Georgian Bay and is entirely Canadian water.

I would urge upon the Government the importance of considerably broadening the cutting at Little Current, Manitoulin Island; this done, and a few of the rocks blasted in St. Joseph's Channel, the North Channel of Lake Huron would present a magnificent and in the Fall a comparatively sheltered commercial highway.

In addition to the survey of St. Joseph's Channel, so much of the remaining portion of the North Channel of Lake Huron yet unsurveyed, viz.:—Bruce Mines to Mildram Point—was done as the remaining time permitted. This consisted in triangulating and sketching the coast line of both sides of the Channel, the number of miles of the latter being 110. The working chart of this locality will be plotted during the present winter and prepared for sounding next season. This should be the first work taken up in 1890, as the numerous temporary beacons which have been erected and serve as the scaffolding for the details, will be lost if allowed to remain any length of time. This portion completed, a vessel will be able to proceed from Owen Sound to Sault Ste. Marie across 220 miles of surveyed waters.

The number of linear miles of boat sounding in St. Joseph's Channel amounted to 420 and the miles of coast line to 106.

I would respectfully suggest that the printed Admiralty charts of the lakes, be put upon the free list, the duty at present adding considerably to their cost. This requires especial attention, because the United States Government are able to distribute the charts of their shores of the lakes free, not only to their own people but to masters of Canadian vessels.

Between the first of next May and the present, the time will be fully occupied in getting the remainder of our last season's work down on paper, making copies of them for the engraver and writing accompanying sailing directions for the printer.

It might be well to give a short history of this, the first hydrographical survey, undertaken by and at the sole expense of the Government of Canada, since its inception.

Owing to the number of vessels lost every autumn in Georgian Bay, culminating in the loss of the steamer "Asia" with some 150 lives, coupled with the prospect of a rapidly increasing trade from the south-east ports of Georgian Bay, to the westward in connecting with the railway systems, it was decided by the Dominion Government to have the waters of Georgian Bay and the North Channel of Lake Huron as far as Sault Ste. Marie surveyed, and a request was made to the British Government for a suitable officer to undertake the work. I had the honor of being selected by the Admiralty for this survey and arrived at Ottawa on the 14th August, 1883, and Georgian Bay two days later. Owing to the lateness of the season for aquatic operations, coupled with having no vessel nor assistants, little could be done that year. A vessel, however, was hired for a couple of months and the ground, as it were, cleared for the construction of a chart, which was completed the next year, 1884, and issued to the public in 1885 under the title of "Cabot Head to Cape Smith and entrance to Georgian Bay." See accompanying diagram.

In the spring of 1884 tenders were invited for a vessel for the survey, and a tug, called the "Edsall," being considered the most suitable, was purchased for the sum of $15,000, and with the aid of some $4,000 more, she was adapted and furnished for the survey under the name of the "Bayfield," in remembrance of the late admiral of that name, who had done so much excellent work on the Great Lakes and in the River and Gulf of St. Lawrence.

During the season of 1884 I had as assistant Lieut. W. J. Stewart, first graduate and gold medalist of Kingston Royal Military College; he is still with me, and, as you are aware, has become a very efficient assistant.

In the spring of 1885 another graduate from the same institution was appointed to the survey, Mr. D. C. Campbell.

In the summer of 1885, the survey was extended into the North Channel of Lake Huron, as the passage, 12 to 15 miles in breadth, is called, which separates Manitoulin Island from the main shore. This channel was surveyed as far as Clapperton Island, and in 1886 a second chart with title "Georgian Bay to Clapperton Island," was published. See attached diagram.

The outdoor season of 1886 was occupied in the extension of the survey along the north-east coast of Georgian Bay, from Collins' Inlet to Byng Inlet, and as much progress made as the broken up character of the coast and numerous dangers would admit of. October of that year was spent in the more sheltered waters of the North Channel of Lake Huron.

The summer of 1887 was entirely occupied in the prosecution of the survey of the North Channel of Lake Huron, westward from Clapperton Island, and with an additional month in 1888, the work was advanced as far as Mississauga Strait. The chart of this locality has just been issued under the name "Clapperton Island to Mildram Point." See attached diagram.

The coast between Cabot Head and Cape Rich, on the south-west side of Georgian Bay, was taken up in 1888, the volume of shipping trade to Owen Sound, Collingwood and Midland from Port Arthur and Chicago being now very considerable. A special plan was also made that year of Collingwood and its approaches. The past summer's operations you are already acquainted with.

I estimate that three years will complete the survey of Georgian Bay and the North Channel of Lake Huron. To one unacquainted with the labor of hydrographical surveying, it may seem a long period for these waters, but it should be remembered that the season for field operations is only 5½ months—Sundays and bad weather days still further reduce the season to not much more than three months,

DIAGRAM

TO ACCOMPANY REPORT OF

GEORGIAN BAY SURVEY

SHOWING WORK DONE EACH YEAR AND PORTION YET REMAINING TO BE DONE

PREPARED BY

STAFF COMMANDER BOULTON, R.N.

1889

Published by the Department of Marine, Canada.

CANADA

UNITED STATES

LAKE HURON

GEORGIAN BAY

GRAND MANITOULIN ISLAND

UPPER PENINSULA

DRUMMOND I.

COCKBURN I.

MACKINAC STRAIT

DETOUR PASSAGE

MISSISSAUGA STRAIT

CHEBOYGAN

PRESQUILE

ALPENA

ALCONA

Partly surveyed 1889

1889

1887

1885

1886

1884

1888

Portion yet remaining to be done

(Surface of the Lake is 594 feet above the mean level of the Sea)

Longitude West from Greenwich

four days' work out of seven being rather more than we get on an average, so that ten years is really only equivalent to about 2½ years continuous work.

The United States Government completed the survey of their shores of the Great Lakes in 1881, taking 40 years, with a staff three times as large as mine, and spending $2,977,000 over it.

I have honour to be, Sir,
Your most obedient servant,

J. G. BOULTON,
Staff Commander, R. N. and Admiralty Surveyor.

APPENDIX No. 5.

REPORT ON SIGNAL SERVICE.

QUEBEC, 30th December, 1889.

WM. SMITH, Esq.,
Deputy Minister, Marine, Ottawa.

SIR,—I have the honour to enclose herewith, as requested by your letter of the 12th instant and telegram of 27th instant, my annual report of the Signal Service for the past year up to the closing of navigation. The report is made up, as follows:

1. Annual Report.
2. Special Ice Report from Belle Isle.
3. Names of stations, station agents, post office addresses of same, &c.
4. Details of casualties recorded.
5. Tabular statement of above giving place of register, age, tonnage, amount of loss, &c.

(Latter two mailed December 28th.)

I have the honour to be,
Sir,
Your most obedient servant,

H. J. McHUGH,
Inspector.

ANNUAL REPORT OF THE INSPECTOR OF THE SIGNAL SERVICE AS TO MOVEMENTS OF ICE, FOR SEASON OF 1889.

QUEBEC, December, 1889.

SIR,—I have the honour to submit the following report as to the service for the season of 1889.

With the view of ascertaining and having a record of the movements of ice in the lower part of the River and Gulf of St. Lawrence, at the request of the Quebec Board of Trade, the Department had reports made from such stations during the months of January and February, the same being continued through the months of March and April, up to opening of navigation.

From the 1st to the 14th April, one report only per day was received and forwarded, as in previous seasons, to the Boards of Trade of Montreal, St. John, N.B., and Quebec, and to the Chamber of Commerce, Halifax, N.S., also to the press of Montreal and Quebec, to agents of steamship lines, to the pilots of the St. Lawrence and to the Immigration Agent and Custom House and Agent of the Department of Marine, Quebec, also to Messrs. H. Fry & Co., Lloyds' agent.

Commencing on the 25th April, two reports daily were received and forwarded as above. This was two days in advance of last year, owing to the Agent at Cape Ray, Nfld. reporting the passing of the S.S. "Lake Nepigon" at 7.00 p.m. on the 23rd April.

The season in the outer Gulf and vicinity of Cape Ray and St. Pierre, Miquelon was remarkable for the almost total absence of ice. St. Pierre reported no ice for the whole season from April to end of May, and the Agent at Cape Ray reported ice in that vicinity, but as seen but a few times during the whole winter. As in the

season of 1888, the prevalence of north and north-west winds was the cause of this, as also the very little ice that formed on the shores of Labrador, north shore and Anticosti.

Full information was supplied from the Bureau here to the Agents at Anticosti, Bird Rocks, Meat Cove, Cape Ray and St. Pierre, as to the movements of ice in the River and Gulf of St. Lawrence, also the state of the river from Quebec and Montreal, for the guidance of any vessel, calling for such information.

Sydney Harbour, C.B., remained open until the 24th February when the harbour was blocked with heavy close-packed ice. The harbour was again clear of ice and free to vessels on the 29th April.

The Gut of Canso, N.S., was open for vessels on the 7th April, nineteen days earlier than in 1888, when it was free of ice on the 26th April.

The Strait of Northumberland, the upper part of the Baie des Chaleur, the west coast of Cape Breton, was very free of ice from the month of March. South-west winds drove it in the direction of the Magdalen Islands, but it soon broke up and disappeared.

The harbour of Pleasant Bay was open on the 22nd March, and the fleet of sealing schooners got off; this was eight days earlier than in 1888. During the first week in March seals were seen in large herds or flocks off Manicouagan north shore and off Bird Rocks. Newfoundland steamers "Mastiff" and "Panther," which left Cape Ray, 8th March signalled Bird Rocks, March 11th, reported a few seals seen but got none; they proceeded north and hunted and killed seals north of Fox Bay, Anticosti. There were a number of schooners seen in the ice some five miles off close to the steamers. No information as to the catch made by them.

The mail steamer "Beaver," Captain Lemaisho, left Pictou for the Magdalen Islands on Saturday, April 6th. Owing to a heavy jam of ice at Souris, P.E.I., had to remain there several days, and having got out, met with considerable ice between East Cape and Entry Island and did not reach the Magdalen Islands until 30th April.

The catch of herring and seals was very good during the month of April; on the 13th April 4,000 seals were killed in Pleasant Bay.

January.

Very little ice was reported as being in the river until the beginning of January when close packed ice was reported at most stations with the exception of Father Point where for the first three weeks in January no ice was seen, and during the last week light close packed ice only near shore.

The north shore remained equally free, notably the entrance to the Saguenay River, which remained open all winter, and, with the exception of a few days, no difficulty would have been found for any vessel to make Tadousac harbour.

During the same month a large quantity of light close-packed ice was reported off all stations and coasts of Anticosti, Bird Rocks, Magdalen Islands, Meat Cove, and west coast of Cape Breton.

Cape Ray reported no ice seen.

Very little snow fell during the first three weeks and the wind varied from north, north-west to south, south-west, with a few days of east wind.

Considerable snow fell everywhere during the last week, more especially on the north shore and the Island of Anticosti. The thermometer ranged below zero several times during the month.

Seals were seen in considerable numbers during the whole of January on the ice off Manicouagan shoals; at the mouth of River Manicouagan, St. Pancras and River Godbout, two flocks off latter place estimated at over 1,000 each.

February.

Very heavy snowfalls occurred during the month of February—heavy gales of east winds drifting it badly. The ice had increased and was reported as being heavy and close-packed from most of the stations and drifting with the wind. For the

month the average showed north and north-west winds prevailing. The thermometer ranged below zero a few days only. As a rule the weather was mild, and when not snowing, clear.

Hood seals were seen in large numbers off Bird Rocks in the early part of the month on heavy, close-packed field ice.

Seals were reported as being plentiful along the north shore to Point des Monts, but very few killed.

Cape Ray reported ice off that station on the 23rd February only; none seen during the previous or latter part of the month.

The entrance to the Saguenay was filled with heavy, close-packed ice during the first two weeks of February, and was perfectly free during the balance of the month.

March.

For the first and second week of March Father Point was perfectly free from ice; light to heavy, close-packed ice was reported off there occasionally during the rest of the month. The weather was variable during the time, snow, rain and sleet, cloudy to clear weather, with south, south-east and north-east winds. The thermometer averaging 20° during the month.

The river and gulf at other places was covered with light to heavy, close-packed ice during the early part of this month. South and south-east winds prevailed in the gulf, with fairly clear weather.

Cape Ray reported fog and rain and similar winds, and no ice during the same period, with the exception of the 15th and 16th March, when heavy open ice, and far off from shore was reported.

For the latter part of the month of March a good deal of open and close-packed ice was reported from most of the stations, with variable weather and winds; the third week ending 23rd showing a prevalence of east and north-east winds, clear, and local snowstorms.

No ice at Tadousac, entrance to the Saguenay and River du Loup for week ending 23rd March; the same applies to Cape Ray, Newfoundland, and to Father Point, with exeeption of a couple of days when the ice hugged the shore.

For the last week of March and first week of April very little ice seen in river and upper part of gulf, but off Manicouagan and north shore a good deal of heavy open ice was reported and close-packed ice off Heath Point, Anticosti and Bird Rocks and Magdalen Islands.

Cape Ray again reported no ice.

Anticosti—No ice seen from the island after 17th April.

Bird Rocks—Agent reported heavy open to close-packed ice in that vicinity up to the 27th April, when the cable was interrupted.

Very little field ice was met by vessels coming by the south of Newfoundland, in the Gulf of St. Lawrence after the 28th April.

Steamship "Lord Stanley," Captain Williams, from Glasgow, April 9th, arrived in port at 4 a.m., May 2nd. Had moderate weather up to the 19th April, when fog was met with. On the 20th fog continued, vessel going slow; at 4 a.m., met field ice. 21st, weather dull, vessel going slow through ice towards St. Paul's Island; 6 a.m., fog and ice to north and north-west all day. 22nd, thick fog, ice all around, made towards Cape North, which was reached at 11 a. m.; heavy field ice here, impossible to get through, had to go to Aspee Bay for shelter. On the 24th got under weigh, had to work through ice and fog until the 28th, when Cape Rosier was reached. After that had thick weather up the gulf and river, but no ice.

Belle Isle Closed.

Steamship "Toronto," Captain Jas. McAuley, from Liverpool, May 30, arrived in port June 15th, p. m. The captain reported met considerable west and south wind, rain and fog, and on June 10th, lat. 52.22, lon. 53.23, passed several large ice-

bergs and found a solid barrier of ice, rendering it impossible to proceed through Straits of Belle Isle. Steamed 30 miles to northward, but could not find a passage through. Kept away to the south for Cape Race; had dense fog at times and passed several very large icebergs. Dense fog rounding Cape Race and to westward of St. Pierre; met no more ice.

With few exceptions, all vessels that came by the Straits of Belle Isle met icebergs, singly or in great numbers, not only to the eastward but also in the Straits, and the Allan Royal Mail Steamer "Polynesian," Captain H. Wylie, from Moville, October 25th, arrived Quebec November 5th, passed a large iceberg 20 miles west of Greenly Island.

Steamship "Erl King," Captain Priske, from London, October 24th, arrived at Quebec November 8th, passed several large icebergs to the eastward of Belle Isle November 3rd.

Royal Mail Steamer "Vancouver," Captain Lindall, from Liverpool November 1st, arrived at Quebec November 10th, passed an iceberg November 7th outside Belle Isle.

Belle Isle Open.

Steamship "Montreal," Captain J. Wall, from Liverpool, June 8th, arrived in port at 8.10 p.m. June 19th. Captain Wall reported: experienced a winter passage of continuous strong south-west and north-west winds, rain, misty fogs with very cold weather. At 3 a.m. June 16th, in lat. 52.50 N. and long. 52.03 W., passed six large icebergs, scattered three or four miles apart; 3 p.m. same date passed about twelve large and small icebergs ten miles south-east of Belle Isle; 4 p.m. passed Belle Isle lighthouse. No ice of any kind to be seen from Belle Isle, through the Straits, or in the Gulf.

Navigation Open.

Navigation was open between River du Loup and the North Shore on the 16th March.

Navigation open to the harbour of Gaspé on 29th April.

Schooner "Waterlily," from Murray Bay, loaded with wood, arrived up from there (at Quebec) on April 1st.

Three Rivers reported 12th April; River low and clear of ice; none passing.

Steamship "Napoleon," Captain Larochelle, came out of the Louise Basin and moored at the Queen's Wharf on the 16th April.

Schooner "Ste. Marie," with general cargo, bound for Labrador and Newfoundland, left Quebec on the 16th April.

The Upper Traverse, Red Island and Manicouagan lightships left for their respective stations on 20th April in tow of "Napoleon III."

Steamship "Polino," Captain Lachance, left Quebec, 21st April, for Montreal, and arrived there next morning, the first arrival in that port of a sea-going vessel.

Richelieu steamer "Montreal" arrived down from Montreal at 6.30 a.m., 24th April.

Transatlantic Vessels.

FIRST ARRIVAL FROM SEA.

The Beaver Line steamship "Lake Nepigon," Captain Carey, from Liverpool 12th April, arrived in port at 3.45 a.m. 26th April. She was reported as passing Cape Ray at 7 p.m. Tuesday, 23rd April.

Last season the first arrival was on the 29th April, being the Dominion steamer "Vancouver," Captain Lindall. Captain reported having had strong westerly wind up to Banks of Newfoundland, and from thence considerable fog. Met three icebergs outside the gulf, but no field ice. Saw no ice in the gulf except a little off the Gaspé coast.

The First Sailing Vessel from Sea.

The Norwegian bark "Howard," Captain Bastiensen, from London, with a cargo of cement, arrived in port at 6 a.m., 30th April, and moored at the Grand Trunk Railway wharf. The captain reported left London on the morning of the 5th April, making the passage in 25 days. He arrived here nine days earlier in the season than the first sea-going vessel last year. In 1888 the first sailing vessel to arrive was the bark "Helga," Capt. Schulstok, from Lonsberg, 19th April, which arrived here on the 8th May. Met no ice in the gulf.

Last Steamer Inwards.

The steamship "Polino," Captain Lachance, from St. John's, Newfoundland, for Montreal, arrived in port on the 23rd November.

The "Polino" was the first outgoing vessel for sea from Quebec, having left on 21st April.

Last Outward Steamer for Sea.

The Belgian steamship "Electrique," Capt. Charles, bound for Bristol, left port at 4 p.m. on the 27th November.

Cable Interrupted.

The Dominion Government telegraph cable, connecting Bird Rocks with Grosse Isle, Magdalen Islands, was reported interrupted on the 3rd December and remains in the same condition up to present date, 30th December.

Respectfully submitted.

H. J. McHUGH,
Inspector Signal Service.

QUEBEC, 30th December, 1889.

APPENDIX A.

REPORT ON THE ICE IN THE STRAITS OF BELLE ISLE FROM 16TH DECEMBER, 1888 TO 19TH APRIL, 1889.

December 16.—Thermometer 3° below zero. First appearance of ice; some slate ice coming from north-east.

December 21.—Straits clear of ice.

December 25.—A good deal of thin sheet ice to the west and south; very little to east.

December 28.—Fresh south wind with rain; straits clear of ice.

December 30.—Thermometer 10° below zero.

January 7, 1889.—Straits covered with thin sheet ice; a large part clear to the east.

January 18.—Ice slack in the straits; a good many large lakes of open water amongst it. Thermometer 32°; mild; calm; steamers could navigate through the straits up to this date without any trouble.

January 22.—Straits full of large sheets of thin ice.

January 31.—Thermometer 21° below zero; straits full of sheet and slate or slab ice, moving east.

February 6.—A good deal of clear water between here and south shore.

February 14.—A good deal of large sheet ice in the straits to the east for 20 miles; heavier far off. Four icebergs in sight, same direction.

February 20.—No ice between here and the Labrador shore, except thin slate ice.

February 24.—Thermometer 26° below zero; straits full of large sheet and slate ice, moving east very fast.

March 1.—Ice slack in the straits; a good deal of clear water through it.

March 8.—Weather mild; very little ice to the west or south.

March 13.—No ice to the west or south-west. Steamer in sight to the south-east arrived here 10 a. m. S.S. "Eagle," Capt. Jackman, 80 hours from St. John's, Nfld., reports very little ice to the south and but a few seals.

Dundee sealing steamer "Aurora," Capt. McKay, arrived at 2 p. m.; reports left St. John's, March 9th, a. m.; saw very little ice inside, but a good deal of ice and icebergs 100 miles east south-east; left same day in search of seals.

March 15.—Strong gale north north-west, drifting and snowing heavily. S.S. "Eagle" lying to off the lee of the Island; started north at 2 p. m.

March 17.—A heavy jam of ice down out from north-east; three schooners to south-east; S.S. "Eagle" to the east.

March 27.—A heavy jam of ice drifting into the straits; very little clear water to be seen.

April 1.—Strong gale west south-west; ice drifting out very fast.

April 3.—Very little ice in the straits; nothing to impede navigation by steamer or sailing vessel.

April 9.—Straits clear of ice to west and north-west; a small quantity to the south and east; eight icebergs to the south and east.

April 11.—Strong east north-east with heavy rain.

April 12.—Some scattered ice in the straits.

April 18.—Straits clear to the west; two schooners off here.

April 19.—Straits clear of ice.

Respectfully submitted.

H. J. McHUGH,
Inspector Signal Service.

Quebec, 30th December, 1889.

TELEGRAPH, SEMAPHORE AND SIGNAL
RIVER AND GULF
SOUTH SHORE OF THE

	Signal Stations.	Telegraph Office.	Light House.	Flag Station.	Semaphore Station.	Marine Miles from Quebec.	Telegraph Co. Working Lines	
1	L'Islet	Tel. Office		Flag..		43	Great North-Western Co.	
2	River du Loup	do	Light House..	do ..		85	do	
3	Father Point	do	do ..	do ..		155	do	
4	Little Metis	do	do ..	do ..		175	do	
5	Matane	do	do ..	do ..		196	do	
6	Cape Chatte	do	do ..	do ..		230	do	
7	Martin River	do	do ..	do ..		255	do	
8	Cape Magdalen	do	do ..	do ..		290	do	
9	Fame Point	do	do ..	do ..		320	do	
10	Cape Rosier	do	do ..	do ..		354	do	
	NORTH SHORE OF THE							
11	Port Neuf	Tel. Office	Light House..	Flag..		150	Dom. Govt. and G. N. W. Co	
12	Manicouagan	do	L. ship, 4 m. off	do ..		180	do	do
13	Point des Monts	do	Light House..	do ..		220	do	do
14	Egg Island	do	do ..	do ..		241	do	do
	GASPÉ COAST							
15	Cape Despair	Tel. Office	Light House..	Flag..		384	Great North-Western Co.	
16	Point Maquereau	do	do ..	do ..		408	do	
	COAST OF NEW							
17	Point Escuminac	Tel. Office	Light House..	Flag..		469	Dom. Govt. and G. N. W. Co	
	ISLAND OF							
18	West Point	Tel. Office	Light House..	Flag..		328	Dom. Govt. and G. N. W. Co	
19	South-West Point	do	do ..	do ..		356	do	do
20	South Point	do	do ..	do ..		413	do	do
21	Heath Point	do	do ..	do ..		450	do	do
	MAGDALEN							
22	Grosse Isle	Tel. Office		Flag..		475	D. Govt., W.U. & G.N.W.Co.	
23	Etang du Nord	do	Light House..	do ..		475	do	do
24	Amherst Island	do	do ..	do ..		475	do	do
	BIRD							
25	Bird Rocks	Tel. Office	Light House..	Flag..		480	D. Govt., W.U., & G.N.W. Co	
	CAPE BRETON							
26	Meat Cove	Tel. Office	Light House..	Flag..		530	D. Govt., W.U., & G.N.W.Co	
27	Low Point	do	do ..	do ..	Semaphore..	575	do	do
	NEWFOU							
28	Cape Ray	Tel. Office	Light House..	Flag..		555	D. Govt., Anglo-Amer. Cable Co., W. U., & G.N.W.Co.	

STATIONS, MARINE DEPARTMENT, CANADA.

OF ST. LAWRENCE.

RIVER ST. LAWRENCE.

Rate per ten words and additional words.	Date when Established.	Name of Agent.	Post Office.	County.	Province.	Salary per Annum from Marine Department.
25c. & 1c..	Oct. 28, '79.	Mrs. J. B. E. Fortin....	L'Islet.....	L'Islet.....	Que..	$50
do ..	Nov. 16, '81.	Mr. L. T. Pinze.....	River du Loup (en bas)..	Témiscouata....	do ..	50
do ..	Nov. 22, '79.	John McWilliams...	Father Point.....	Rimouski	do ..	50
do ..	Nov. 17, '79.	Jules Martin.....	Little Metis	do	do ..	50
do ..	Nov. 5, '79.	P. Desjardins.....	Matane.....	do	do ..	50
do ..	Sept. 19, '79.	Treflé Coté.....	Cape Chatte.....	Gaspé.....	do ..	50
do ..	Sept. 23, '79.	Jean Gauthier.....	Martin River.....	do	do ..	50
do ..	Oct. 9, '79.	J. F. Sasseville.....	Cape Magdalen.....	do	do ..	50
do ..	Oct. 14, '80.	James Ascah.....	Fox River.....	do	do ..	50
do ..	Oct. 20, '79.	J. B. Vien.....	Cape Rosier.....	do	do ..	50
RIVER ST. LAWRENCE.						
40c. & 2c..	June 1, '83.	Mr. Dorelas Tremblay...	Port Neuf (en bas)	Saguenay	Que..	$50
do ..	Aug. 15, '83	P. O. Bonenfant....	Manicouagan	North Shore....	do ..	
do ..	Oct. 19, '83.	L. F. Faffard.....	Point des Monts.... ...	do	do ..	50
do ..	Oct. 12, '86.	Paul Coté.....	Egg Island.....	do	do ..	50
OF THE GULF.						
25c. & 1c..	June 17, '80.	Mr. James Beck.....	Cape Despair.....	Gaspé.....	Que..	$50
do ..	May 22, '80.	Auguste Bertrand...	Port Daniel.....	do	do ..	50
BRUNSWICK.						
40c. & 2c..	July 2, '85.	Mr. Henry Phillipps....	Point Escuminac.	Northumberland	N.B..	$50
ANTICOSTI.						
$1.05 & 6c.	Oct. 1, '81.	Mr. Auguste Malouin...	Anticosti Id. *viâ* Gaspé..	Gaspé.....	Que..	
do .	Oct. 18, '80.	E. Pope.....	do ..	do	do ..	
do .	July 27, '81.	Jean Nadeau.....	do ..	do	do ..	
do .	July 20, '81.	Thomas Gagné.....	do ..	do	do ..	
ISLANDS.						
$1.05 & 7c.	Aug. 17, '80.	Mr. A. Le Bourdais.....	Magdalen Ids. *viâ* Pictou	Gaspé.....	Que..	
do .	Dec. 1, '81.	Timothy O'Brien....	do N. S.	do	do ..	
do .	June 11, '81.	William Cormier....	do	do	do ..	
ROCKS.						
$1.05 & 7c.	Aug. 20, '81.	Mr. Telesphore Turbide.	House Harbour, Magdalen Islds. *via* Pictou.	Gaspé.....	Que..	
NOVA SCOTIA.						
30c & 2c..	Nov. 7, '81..	Mr. A. R. MacDonald..	Meat Cove, C. B.....	Cape Breton....	N. S..	
do ..	Aug. 1, '81..	J. G. Peters.....	Low Point, C. B.....	do	do ..	$50
NDLAND.						
$1.05&10c.	Nov. 3, '82.	Mr. E. R. Rennie.....	Cape Ray.....	.....	Nfld..	$50

H. J. McHUGH, *Inspector Signal Service.*

APPENDIX

BEING a Statement relative to the Life-boat Stations

Station.	Established.	Coxswain.	Number of Crew.	Salary of Coxswain.	Wages of Crew.	Value of Boat.
						$ cts.
Blanche, N.S.	Sept. —, 1889.	W. A. B. Smith.	6	$75 p. annum and $1.50 for each drill.	$1.50 each drill twice a month.	575 00
Cape Sable, N.S.	.....	Light-keeper....	No organized crew...	.....	.....	.....
Cobourg, Ont.	Nov. 7, 1882.	D. Rooney.....	6	$75 p. annum and $1.50 for each drill.	$1.50 each drill twice a month.	575 00
Collingwood, Ont.	Sept. 21, 1885.	P. Doherty.....	6	do ..	do ..	575 00
Devil's Island, N.S.	1885.	Light-keeper....	.....	Not fixed....	Not fixed.....	575 00
Duncan's Cove, N.S.	1886.	R. G. Monk....	6	$75 p. annum and $1.50 for each drill.	$1.50 each drill twice a month.	575 00
Goderich, Ont.	Oct. 21, 1886.	Wm. Babb.....	6	do ..	do ..	575 00
Herring Cove, N.S.	.....	J. Dempsey.....	No organized crew..	.....	.....	.....
Mud Island, N.S.	.....	H. Williams....	do ..	.....	.....	.....
Pelee Island, Ont.	1887.	A. Heming.....	6	$75 p. annum and $1.50 for each drill.	$1.50 each drill twice a month.	575 00
Pictou Island, N.S.	Nov. 23, 1889.	D. McLean.....	6	do ..	do ..	575 00
Poplar Point, Ont.	Apl. 20, 1883.	L. Spafford.....	6	do ..	do ..	550 00
Port Hope, Ont.	Nov. 6, 1889.	C. R. Nixon....	6	do ..	do ..	620 00
Port Mouton, N.S.	Nov. —, 1889.	J. Maxwell.....	6	do ..	do ..	575 00
Port Rowan, Ont.	Oct. 19, 1883.	J. W. McCall...	6	do ..	do ..	.....
Port Stanley, Ont.	June 25, 1885.	Wm. Berry.....	6	do ..	do ..	575 00
Sable Island, N.S.	1885.	Supt. Humane Establishment.	From staff of Humane Establishment.	Paid as superintendent and staff of Humane Establishment.		575 00
Scatterie, N.S.	1885. Prior to 1885 an ordinary boat.	Light-keeper....	No organized crew.	.....	.....	575 00
Seal Island, N.S.	1880.	do	do ..	$120.....	.....	.....
St. Paul's Island, N.S.	.....	Supt. Humane Establishment.	do ..	.....	.....	.....

No. 6.

maintained by the Dominion Government in Canada.

Description of Boat.	Equipment.	Where Built.	Expenditure for Fiscal Year ended 30th June, 1889.	Services rendered during the Season of 1888-89.
			$ cts.	
Self-righting and self-bailing, 25 feet over all, 8 feet beam, Dobbins' pattern.	Full equipment, as required in regulation boat-house.	Dartmouth, N.S.		
Metallic life-boat, 16 feet keel, 5 feet beam.	Ordinary outfit.			
Self-righting and self-bailing, 25 feet over all, 8 feet beam, Dobbins' pattern.	Full equipment, as required in regulation boat-house.	Goderich, Ont.	268 13	
do ..	do ..	do ..	222 00	
do ..	do ..	Dartmouth, N.S.		
do ..	do ..	do ..	361 39	
do ..	do ..	Goderich, Ont.	569 25	Nov. 26th, went to assistance of schr. "Gulnare" during a severe snow storm, assisted crew at pumps, and piloted vessel into safety.
Metallic life-boat, 28 feet keel, 6 feet beam.	Full equipment.	New York.		
Fishing boats.				
Self-righting and self-bailing, 25 feet over all, 7 feet beam, Dobbins' pattern.	Full equipment, as required in regulation boat-house.	Goderich, Ont.		
do ..	do ..	Dartmouth, N.S.		
do 26 feet over all, 7 feet beam, Dobbins' pattern.	do ..	Buffalo, U.S.	255 98	Went to assistance of barge "Bavaria," but was too late to save lives of crew.
do ..	do ..	Goderich, Ont.		
do ..	do ..	Dartmouth, N.S.		
Surf boat, 26 feet long, 6½ feet beam.	Full equipment and boat-house.	Buffalo, U.S.	235 55	Went to assistance of schr. "Erie Wave," Oct 1st.; had to haul life-boat a long distance and was too late to be of any assistance.
Self-righting and self-bailing, 25 feet over all, 7 feet beam.	do ..	Goderich, Ont.	631 99	
Two boats as described above, Dobbins' pattern.	do ..	Dartmouth, N.S.		
Self-righting, &c., same as others, Dobbins' pattern.	do ..	do		
Wooden life-boat, canoe-built, 26 feet long, 6 feet beam.	do			
Two surf boats, on 25 feet over all, 6½ beam, other 23ft. long, 4ft. 8 in. beam	.....	St. Paul's Island.		

STATEMENT relative to the Life-boat Stations maintained

Station.	Established.	Coxswain.	Number of Crew.	Salary of Coxswain.	Wages of Crew.	Value of Boats.
						$ cts.
Toronto, Ont.....	Mar. 1, 1883.	Wm. Ward.....	6	$75 p. annum and $1.50 for each drill.	$1.50 each drill twice a month.	575 00
Wellington, Ont....	Mar. 17, 1883.	H. McCullough.	6	do ..	do ..	1,400 00
Yarmouth, N.S....	1886. Re-organized, 1889.	G. N. Porter....	6	do ..	do ..	575 00

Besides above-mentioned Life-boats, Life-

Father Point.....	1875	E. Chamard....	6	$5 per annum.	.....	128 00
Isle aux Grues.....	1875	J. Painchaud...	6	do ..	.....	128 00
Kamouraska.....	1875	R. Leblanc.....	6	do ..	.....	128 00
L'Islet	1875	J. B. Dussault..	6	do ..	.....	128 00
Murray Bay.....	1875	Achille Gagné..	6	do ..	.....	128 00
Rivière du Loup....	1882	D. Raymond....	6	do ..	.....	128 00
*Rivière Ouelle.....	1886	G. Mercier.....	6	do ..	.....	108 00
Ste. Anne.....	1875	P. Lafrance.....	6	do ..	.....	128 00
St. Jean Port Joli..	1875	L. D. Babin....	6	do ..	.....	128 00
Trois Pistoles.....	1885	D. Damour.....	6	do ..	.....	128 00

* This canoe was first stationed here in 1875, but was removed to Rivière du Loup in 1882, it being costing $20 less than former one.

by the Dominion Government in Canada—*Concluded.*

Description of Boat.	Equipment.	Where Built.	Expenditure for Fiscal Year ended 30th June, 1889.	Services rendered during the Season of 1888-89.
			$ cts.	
Self-righting, &c., same as others, Dobbins' pattern.	Full equipment and boat-house.	Goderich, Ont.	222 00	Went to assistance of wrecked vessel at Lorne Park, 27th November.
do ..	do ..	Buffalo, U.S.	224 65	On night of 25th Sept. went to the assistance of the schr. "Kate," three-quarters of a mile westward of the station; succeeded in getting a line ashore; landed passengers and part of crew. Also went to South Bay on hearing of the "Bavaria" wreck, but was too late to render any assistance.
do ..	do ..	Dartmouth, N.S.		

canoes are stationed in Quebec, as under :—

.....	12 paddles, 2 boat-hooks, painter and boat-house.	Quebec.		
.....	do ..	do		
.....	do ..	do		
.....	do ..	do		
.....	do ..	do		
.....	do ..	do		
.....	do ..	do		
.....	do ..	do		
.....	do ..	do		
.....	do ..	do		

considered more serviceable at the latter place. In 1886 a new canoe was built and stationed at this place,

APPENDIX No. 7.

REPORT ON TIDAL OBSERVATIONS.

METEOROLOGICAL OFFICE,
TORONTO, 2nd December, 1889.

WM. SMITH, Esq.,
Deputy Minister of Marine,
Ottawa.

SIR,—I have the honour to forward herewith Report on Tidal Observations for the year 1889.

I have the honour to be, Sir,
Your obedient servant,
ANDREW R. GORDON.

REPORT ON TIDAL OBSERVATIONS FOR THE YEAR 1889.

THE OBSERVATORY,
TORONTO, 2nd December, 1889.

The Hon. C. H. TUPPER,
Minister of Marine and Fisheries,
Ottawa.

SIR,—I have the honour to report on the question of Tidal Observations, to be taken on the coasts of Canada, as follows :—

The British Association at its last meeting again re-appointed the following gentlemen to be a committee for the "Promotion of Tidal Observations in Canada," viz., Professor Johnson, Montreal, chairman; Professors McGregor, J. B. Cherriman, H. J. Bovey, and Mr. C. Carpmael.

The question of the promotion of tidal observations is full of interest from a scientific point of view; but it is the practical phase of its immense importance to navigation which only requires to be realised, in order to commend this work as one which it is highly desirable should be commenced with as little delay as possible.

Vessels approaching our coasts are frequently several days without getting observations for position, and if, after running for a day or two in cloudy weather, the margin of our coasts and the Gulf are enveloped in fog as the ship nears the land, it becomes a matter of the utmost importance that, so far as possible, the direction and rate of flow of the currents in these waters should be determined and mapped in the simplest possible manner, so that a shipmaster can easily ascertain what current is affecting his ship at the time.

That currents of very considerable velocity and variability in direction exist in the Gulf of St. Lawrence and on the Banks of Newfoundland, none who have navigated these waters will deny; but the impression seems to have grown with years among shipmasters, that these uncertain currents, are governed by whatever the wind direction may have been; and, as it is beyond the power of any one on board a ship to do more than guess what wind has previously prevailed, many shipmasters view with comparative indifference, the subject of tidal observations, which are considered by them as principally of value at places when the time of high water at the entrance of a port is the information they hope to get therefrom.

That a certain amount of variability in the velocity and direction of tidal currents will always remain as due to the action of the wind is undoubtedly true,

but by far the larger part of the unknown quantity will be found to be due to tidal action, and this part is capable of determination with a very considerable approach to accuracy, but the problem must be solved by continued systematic observations, such as have been carried out on the coasts of Great Britain and in the North Sea, and are now being carried out by the Government of the United States for their coastal waters.

It is generally admitted, and has been demonstrated in my report on this subject for the year 1887, that the means now in the hands of mariners for predicting the phases of the tides on our coast are but little better than guess work, especially when applied to the question, not of height of tide, but of direction of tidal current. It has now been clearly shown that the times of current turn are not coincident with the times of high and low water except at head of tide, and the period which may elapse between the time of high water, which the shipmaster may have carefully approximated (one cannot say determined) and the time of current turn may amount to several hours.

As an instance, I may cite the east side of Prince Edward Island, where both theory and a few desultory observations go to show that, say off Souris the Ebb current will not commence to flow off shore for some two hours or more after high water and the master of a vessel might thus be allowing two hours ebb current when he had in fact been having two hours flood current; at one and a half knots per hour not an uncommon rate for sping tides, this mis-calculation might give him an error in position of six miles in two hours run and might cause the loss of the vessel on the East Point reefs.

To such an extent do these uncertain and unknown tidal currents prevail in the gulf of St. Lawrence, that no prudent shipmaster, in thick weather, thinks of his course and distance as anything but a rough guide to let him know when he must commence the constant use of the lead, which is in many cases his only resource.

The publication of Tide Tables and a Tidal Chart for our Atlantic coast, and the Gulf of St. Lawrence, would be regarded as a great boon to those navigating the water in question, and whilst this would never be an excuse for the neglect of the Lead Log and Look out, in thick weather, it would certainly tend to remove one of the cause of disaster to shipping.

If we consider the question from the point of view of cost, it may be pointed out that the cost is trivial compared with the magnitude of the interests at stake. I have no data available as to the extent and value of the shipping visiting the St. Lawrence, but if we take the value of a single cargo steamer, say the "Carthaginian," of the Allan Line, cost probably $400,000. Other cargo steamers cost much less and some of the passenger steamers more; but say as a matter of estimate that their are forty different ocean steamships which visit the St. Lawrence annually, and putting their average value at $250,000 each, this estimate would give $10,000,000 as the value of the steamship fleet alone, on which the $10,000 required to carry out this work would represent as an insurance premium one-tenth of one per cent., a very small amount to pay for the increased safety which might be reasonably expected to follow the carrying out of this work.

The loss during the present year of the S.S. "Montreal" and H.M.S. "Lily", whether in each case actually due to the action of unknown currents or not, certainly indicates the desirability of giving to navigators all the information in regard to currents affecting their ships which modern methods of observation enable us to acquire.

The only tidal work which has hitherto been done in Canada, is the determination by the Admiralty surveyors of the tidal constant known as "the time of high water, full change" and which is placed on the Admiralty charts, and there was also kept in operation for some years by the Imperial authorities, at the Halifax dockyard, a self registering tide gauge; but the curves of this latter instrument have never been read or worked up, while the former being eye observations from Tide staffs taken about the time of high and low water are unreliable, and the system of prediction based on these constants is not only faulty in theory, but is in practise often erroneous to a very considerable degree.

In the recent survey of the River St. Lawrence, data for the determination of the Tidal constant, was obtained at several places by a series of hourly readings of tide staffs carried through a semilunation or lunation as the circumstances of the case permitted. This data and the curves of the Halifax guage would be now available for working up according to modern methods, and as Halifax could be made a port of reference for a number of Tide staff stations, we should at the very beginning of the work have something in hand to go on with.

In Great Britain, the Admiralty Tide Tables are regularly published, and in the United States, the American Coasters Nautical Almanac furnishes the required information in regard to tides and they have for some time past been prosecuting investigations in regard to tidal and other currents at a distance from land.

In Canada I propose that we should utilise the publication known as the "List of Lights" issued by the Marine Department, by having this book published in September of each year and incorporating in it the Tide Tables and such portions of a nautical ephemeris as are of use to vessels in our coasting trade; this book would also contain as soon as the information was available, notes in regard to the direction and velocity of tidal currents, the issue of September in one year to contain all the data for the following year, and many useful notes as sailing directions to those unacquainted with our coasts.

This publication might be called the Canadian Coastal Guide, it should be sold for the actual cost of paper and printing, at all our principal Custom Houses, and it would, I am sure, soon commend itself to a large number of shipmasters trading to our ports as a valuable book.

Should the Governement decide to go on with the work during the present year, I estimate the cost for the current year, as follows:

Estimates.

Working up Halifax records and predicting tides therefrom	$ 800.00
Cost of three tide gauges delivered at Halifax.....	1,000.00
Testing and work setting up prior to 1st July.....	1,000.00
Tide staff, time pieces, expenses and sundries	1,000.00
Examination and reduction of tidal observations in St. Lawrence River taken under the direction of Staff Commissionner Maxwell, R. N.....	1,000.00
Total to 1st July, 1889.....	$4,800.00

In my report for 1887, I went fully into detail in regard to the proposed method of carrying out the observations and showed that a sum of about ten thousand dollars per annum would be required for the carrying out of this work, but this does not make any provision for the charter of a vessel to carry out the system of secondary observations on tidal currents, as it is first necessary to obtain a regular series of observations in regard to time and height of tidal wave, and when these elements have been determined, the current work can be more intelligently undertaken. This latter work would have to be done by one or preferably by two vessels anchored for twenty-four or forty-eight hours, or even longer, at each observation spot, which would have been previously fixed along certain lines laid down on the chart and included in the vessel's programme of work.

A schooner and a small steamer in company could, I think, most economically carry out this work.

Adverting again to the question of maritime losses arising from a lack of knowledge in regard to the existence of these tidal currents, I would point out that at the present time the mariner's principal dependence in thick weather is on his lead, and he has to make his landfall on this and on a sound signal, either an air horn or steam whistle.

My own experience in regard to these signals is that they are very difficult to locate in azimuth, and that the distance off, when judged by the intensity of sound,

must be in most cases purely arbitrary guess-work. We may multiply these signals along our coasts, and do much good by so doing; but they cannot take the place of a knowledge of tidal currents. Each has its own sphere of usefulness, and the sound signal is sure to be more useful when the shipmaster finds that his knowledge of the currents affecting his ship enables him to pick up the sound of the fog signal at the time laid down in his reckoning; whilst now, without this knowledge, the current may have carried him off shore, and beyond the reach of the sound of the horn or whistle, so that when his distance is run he has to stop and feel his way cautiously in by the lead till he picks up the signal, or else lie off till the weather clears.

The foregoing is one practical instance of the value of the proposed tidal work; and as, during the season of navigation in the Gulf of St. Lawrence, fog is very prevalent along the route taken by steamships, it is a matter of the highest importance that all the information possible be gathered up and put into such shape as to be readily available to those navigating our waters.

I have already alluded to the question of the cost of these observation as far as the current year is concerned. I will now endeavour to give an approximate estimate of what the total cost would be to the country to complete the whole system of observations, including the cost of predicting the annual tide tables.

For Current Work.

Cost of steamer, say		$40,000
do schooner, say		5,000
Less by sale of these at end of three years		$35,000
Making the net cost of vessels for work		10,000
Maintenance, per annum $10,000, three years		30,000
Cost of current observations		$40,000
Cost of establishing 6 stations, with automatic tide gauge (see Report 1887, Department of Marine)		6,000
Three of these will be permanent and three maintained for short periods only.		
For twelve stations at end often years, by which time we shall have 3 stations 10 years and 9 stations 3 years series each, at $25.00 per annum, maintenance		25,000
Office staff—temporary assistants, per annum, $1,500		15,000
Organizing offices, expenses and allowance, 2 years, at $750	$1,500	
Eight years inspecting, at $250	2,000	
		3,500
Cost of computing in England—12 stations first year, $250 per station		3,000
Subsequent years at $85 per station—12 stations, $1,020 per annum, 9 years—say		9,000
Tide staff stations, 10 per year, at $200 each, $2,000—10 years		20,000
Reduction of tide staff station observations, at $100 per station—100 stations		10,000
Moving three stations twice, making six removes, and re-establishing, at $600 each move		3,600
Contingencies (as per report 1887) $1,250 per an. ten years		12,500
Total to complete ten years observations		$107,600

Or per year cost 10,760.

At the expiration of ten years from the first commencement of the work there will be data in hand which should give a very fairly accurate idea of the tides and tidal currents on our eastern coasts and in the Gulf of St. Lawrence the total cost of which will have been to the community:—

For current observations	$ 40,000
For rise and fall	107,600
Total cost of tidal work in ten years	$ 147,600

The complete cycle for which at least three stations should be maintained is nineteen years, as it is from these stations that the long period tides have to be calculated which furnish the minor corrections to apply to the tides predicted from short series observations.

A great deal of this work must grow into shape as experience dictates, but I am of opinion that the work can go on satisfactorily under the estimates given. And when the time comes for taking up the current observations the Department may be in a position to grant the use of vessels without buying or chartering, and I think it safe to say that the whole work, including the nineteen year series at three stations, and the annual prediction of the tides during that period, will not exceed in all the sum of two hundred thousand dollars, or one-half the cost of a single first-class freight steamer.

I have the honour to be, Sir,
Your obedient servant,

ANDREW R. GORDON.

APPENDIX No. 8.

REPORT ON QUEBEC RIVER POLICE.

QUEBEC, 3rd December, 1889.

SIR,—I have the honour to submit, for the consideration of the Honorable the Minister of Marine and Fisheries, my annual report, as Superintendent and Chief Officer of the Government River Police at this port.

Appended you will find a statement showing the number of arrests made by the force during the season; the same also gives a description of offences and the nationality of the offenders.

The force resumed its duties on the 1st May with the following staff: Benjamin Trudel, Chief of Police and Shipping Master, who was superannuated on the 30th June; James Cunningham, acting as Deputy Chief, who receives $2.40 per day; five coxswains (one of whom acts as detective and clerk in the shipping office), at $1.90 per day; fourteen constables, at $1.50; and one engineer, at $1.65—making a total of force 21, exclusive of the Chief, all of whom were duly sworn for duty before His Honor the Judge of the Sessions. From the above rate of wages there is retained the sum of 25 cents per day as a guarantee for good conduct, and paid over to the deserving at the end of the season.

In accordance with your instructions of the 4th May last, the police steamer "Dolphin" patrolled the harbour twice a day, boarding all vessels requiring the services of the police to quell a mutiny or other disorder, and to capture deserters or crimps at instance of captain or owner of vessel. The number of trips thus made during the season is three hundred and sixty-four.

A diary of the movements of the steamer and of the work performed by the men has been forwarded to you weekly, as per your order of the 14th June last.

The total number of arrests made is 95, and the number of desertions 312.

I am happy to say that the conduct of the whole force during the past season has been exceptionally good; not a case of intoxication or misconduct occurred.

I have the honour to be, Sir,

Your most obedient servant,

J. U. GREGORY, J.P.,

Agent Dept. Marine, Supt. Quebec River Police and Shipping Master.

WM. SMITH, Esq.,
Deputy Minister of Marine, Ottawa.

STATEMENT of Arrests made at the Port of Quebec by the Government River Police from 1st May to 30th November, 1889.

Offences.		Nationality.	
Desertions	8	England	21
Absence without leave	21	Scotland	16
Refusal of duty	27	Ireland	14
Drunk on wharves	2	Norway	6
Protection for the night	17	Sweden	13
Drunk and disorderly on board	6	United States	1
Assaults on board	4	Canada	8
Chief mates assaulted by crew	5	Newfoundland	3
Thefts on board	2	West Indies	4
Inflicting grievous bodily harm on the High Seas	1	Finland	2
Picked up at seas	2	Wales	1
		Austria	1
		Italy	2
		Holland	1
		Russia	2
	95		95

APPENDIX No. 9.

REPORT OF MONTREAL HARBOUR POLICE.

MONTREAL, 31st December, 1889.

SIR,—I have the honour to submit the annual report of the Government Harbour Police for the season ended 30th November last past.

Early in May the force was sworn in and consisted of one inspector and agent of marine, one chief, two sergeants, one office sergeant, three acting sergeants and twenty-four constables. One of the latter resigned at the end of the first month, and the vacancy was not filled, reducing the number of constables to twenty-three.

The usual duties appertaining to the harbour police were satisfactorily performed, considering the limited number of its members. There were about the usual number of prisoners and a slight increase in accidents and persons drowned or found drowned.

The Department having ordered the disbanding of the force on the 30th November, the staff and men were paid off, and, as instructed, the books, papers, office furniture, &c., shipped to Ottawa; the arms, &c., delivered to the Militia storekeeper at St. Helen's Island, and a few items, as advised, remain in store on the premises.

I have the honour to be, Sir,
Your obedient servant,

WM. SMITH,
Dy. Minister Marine, Ottawa.

H. S. A. ORMOND.

APPENDIX No. 10.

BEING a Statement relating to the Wharves under the control of the Department.

Locality.	Wharfinger.	Date when Rules established for the Government of all Wharves.	Date of Appointment of Wharfinger.	Remuneration Allowed.
Ontario.				
Inverhuron	Vacant	12th June, 1889		25 p. c. of collections.
Kingsville	W. J. Malott		Apr. 16, 1886.	25 do
Rondeau	W. R. Fellowes		Dec. 17, 1888.	25 do
Quebec.				
Anse St. Jean	Vacant			
Baie St. Paul	do			
Carleton	Jos. Couchon		June 4, 1889.	25 do
Cascades	Louis Leroux		do 30, 1887.	25 do
Chicoutimi	Vacant			
Lacolle	B, V. Naylor		July 2, 1886.	25 do
Berthier, Les Eboulements, L'Islet, Murray Bay, Rivière Ouelle, Rivière du Loup	Wharfingers not yet appointed.			
New Carlisle	John C. Hall		June 4, 1889.	25 do
Port Daniel	Jeffrey Lawrence		do 4, 1889.	25 do
Point aux Origneaux	Vacant			
St. Alphonse de Bagotville	do			
St. Jean d'Orléans	do			
St. Laurent d'Orléans	do			
Tadousac	do			
Nova Scotia.				
Arisaig	Donald Ross		Aug. 25, 1888.	25 do
Avonport	Robert Shaw		Nov. 23, 1888.	25 do
Bayfield	Edward Randall		Aug. 25, 1888.	25 do
Belliveau's Cove	Ambrose Thérieau		do 25, 1888.	25 do
Brooklyn	F. T. Gardiner		Oct. 20, 1882.	20 do
Canada Creek	C. E. Eaton		Nov. 23, 1888.	25 do
Cape Cove	Jacob Deveau		Aug. 2, 1889.	25 do
Centreville	W. M. B. Dakin		Aug. 25, 1888.	25 do
Chipman's Brook	Jas. Misaner		Nov. 23, 1888.	25 do
Church Point	Fred. Belleveau		Sept. 15, 1888.	25 do
Cow Bay	Arch. McKinnon		Apr. 15, 1879.	7½ do
Cranberry Head	Abram Thurston		Feb. 16, 1889.	25 do
Delap's Cove	B. R. McCaul		May 10, 1880.	7½ do
Digby	Wm. Watt		June 25, 1879.	10 do
Eagle Head	Nathan Leslie		Jan. 9, 1889.	25 do
East Bay	Donald McInnis (Ronald's son)		April 5, 1886.	50 do
Grand Narrows, Victoria Co	John P. McNeill		Aug. 25, 1888.	25 do
Grand Narrows, Cape Breton Co	E. A. McNeill		Nov. 6, 1888.	25 do
Hall's Harbour	Sydney Roscoe		do 23, 1888.	25 do
Hampton	Judson Foster		Aug. 25, 1888.	25 do
Harbourville	C. O. Cook		Nov. 23, 1888.	25 do
Maitland, Hants Co	C. S. Stuart		Sept. 5, 1888.	25 do
do Yarmouth Co	J. E. Cann		May 16, 1885.	25 do
Margaretsville	T. J. Downie		Aug. 25, 1888.	25 do
Meteghan Cove	H. T. Deveau		Sep. 15, 1888.	25 do

STATEMENT relating to the Wharves, &c.—*Concluded.*

Locality.	Wharfinger.	Date when Rules established for the Government of all Wharves.	Date of Appointment of Wharfinger.	Remuneration Allowed.
Meteghan River	Urbain Doucette		Jan. 3, 1883..	20 p. c. of collections.
Militia Point	Alex. McFadyen		Mar. 21, 1889..	25 do
Morden	Wm. Minnis		Nov. 23, 1888..	25 do
Oak Point	T. E. Bigelow		June 3, 1876..	33⅓ do
Ogilvie	R. S. Armstrong		Nov. 23, 1888..	25 do
Parrsboro'	Thompson Tipping		do 26, 1888..	25 do
Pickett's Wharf	Andrew Bishop		Dec. 24, 1884..	25 do
Plympton	Jos. Potter		Aug. 25, 1888..	25 do
Point Brulé	David Stevenson	12th June, 1889	Nov. 23, 1888..	25 do
Port George	Christopher Anderson		do 6, 1888..	25 do
Port Greville	Vacant			25 do
Port Hood	Robert McDougall		Aug. 25, 1888..	25 do
Port Lorne	Samuel Beardsley		do 25, 1888..	25 do
Salmon River	Thomas Foley		do 25, 1888..	25 do
Saulnierville	John T. Saulnier		do 25, 1888..	25 do
Tracadie	J. M. Hall		Nov. 6, 1888..	25 do
Tusket Wedge	Jas. Cothreau		Feb. 16, 1889..	25 do
Victoria	William Brown		do 11, 1889..	25 do
West River	Malcolm McFarlane		Sep. 3, 1889..	25 do
White Point	Elisha West		Jan. 9, 1889..	25 do
New Brunswick.				
Buctouche	Augus Renaud		July 7, 1887..	25 do
Clifton	Vacant			25 do
Hopewell Cape	Freeman Crocker		May 26, 1886..	25 do
Prince Edward Island.				
Annandale	James Taylor		July 2, 1885..	25 do
Bay View	Joseph Harrington		Oct. 2, 1885..	25 do
Belfast	John Halliday		do 29, 1885..	25 do
Brush Wharf	Levi R. Ings		Sep. 18, 1885..	25 do
Campbell's Cove	Angus McIntyre		Oct. 17, 1888..	25 do
Chapel Point	Ronald McCormack		Sep. 18, 1885..	25 do
China Point	W. S. N. Crane		do 18, 1885..	25 do
Clifton	Wm. McKay		do 22, 1886..	25 do
Crapaud and Victoria Pier.	Percy Palmer		July 2, 1885..	25 do
Georgetown	James Bourke		do 2, 1885..	25 do
Hickey's Wharf	Jas. J. Macdonald		Oct. 15, 1889..	25 do
Hurd's Point	R. Robblee		do 6, 1888..	25 do
Kier's Shore	H. S. McNutt		Nov. 3, 1885..	25 do
Lambert	John A. Macdonald		July 2, 1885..	25 do
Lewis Point	James E. Macdonald		do 2, 1885..	25 do
Mink River	Edward Henderson		do 2, 1885..	25 do
Murray Harbour, South	B. H. Sensabaugh		do 2, 1885..	25 do
Nine Mile Creek	Edward Harrington		Oct. 29, 1885..	25 do
North Cardigan	Donald McIntyre		July 2, 1885..	25 do
Pinette	Hector D. Morrison		Sep. 18, 1885..	25 do
Pownal	Alex. McRae		Oct. 2, 1885..	25 do
St. Mary's Bay	C. H. Lewellin		July 2, 1885..	25 no
Souris	B. McEachern		June 3, 1884..	25 do
South Rustico	Joseph Doucette		Oct. 2, 1885..	25 do
Stevens and Montague	J. A. MacDonald		Sep. 11, 1885..	25 do
Sturgeon River	Bernard Kearney		do 18, 1885..	25 do
Tignish River	Benjamin Gaudet		do 5, 1888..	25 do
Vernon River	J. G. McKenzie		Oct. 19, 1885..	25 do
Wood Island	Malcolm H. McMillan		May 16, 1889..	25 do

WM. SMITH,
Deputy Minister of Marine.

APPENDIX No. 11.

BEING a Statement of Revenue derived from Wharves and Piers, paid to Credit of Receiver-General, for the Fiscal Year ended 30th June, 1889.

Ontario.	$ cts.
Goderich	933 00
Kingsville	478 20
Morpeth	10 37
Total	1,421 57
Quebec.	
Lacolle	54 52
St. John's	310 00
Sorel	39 00
Total	403 52
Nova Scotia.	
Centreville	7 50
Church Point	92 28
Cow Bay	1,348 04
Digby	475 71
East Bay	1 00
Hantsport	47 00
Harbourville	30 16
Iona—Grand Narrows	17 36
Kingsport (Oak Point)	118 40
Maitland, Hants Co	17 51
do Yarmouth Co	55 38
Margaretville	87 37
Meteghan	258 41
Saulniersville	4 00
Total	2,560 12

New Brunswick.	$ cts.
Hopewell Cape	18 75
Prince Edward Island.	
Annandale	81 06
Bay View	24 44
Belfast	67 17
Brush Wharf	131 75
Chapel Point	19 50
China do	6 00
Georgetown	35 26
Hurd's Point	4 43
Kier's Shore	120 36
Lewis' Point	83 50
Montague	182 97
Murray Harbour	17 58
New London	16 00
Newport	35 12
Nine Mile Creek	7 92
Oyster Bed Bridge	47 07
Picket Wharf	40 77
Pinette	10 95
Pownal	96 53
St. Mary's Bay	14 72
Souris	3 19
Sturgeon	24 76
Vernon River	122 68
Total	1,193 73

RECAPITULATION.

Ontario	$ 1,421 57
Quebec	403 52
Nova Scotia	2,560 12
New Brunswick	18 75
Prince Edward Island	1,193 73
	$ 5,597 69

WM. SMITH,
Deputy Minister of Marine.

F. GOURDEAU,
Accountant.

APPENDIX No. 12.

STATEMENT of Sick Mariners' Dues Collected for the Fiscal Year ended 30th June, 1889.

Quebec.	$ cts.
Gaspé	131 48
Magdalen Islands	37 33
Montreal	2,364 84
New Carlisle	272 54
Percé	31 12
Quebec	6,053 08
Rimouski	221 92
St. Armand	3 28
St. John's	1,495 22
Sorel	14 66
Stanstead	22 37
Three Rivers	112 52
Total	10,760 36
New Brunswick.	
Bathurst	296 38
Caraquette	13 94
Chatham	967 06
Dalhousie	388 02
Dorchester	9 00
Moncton	688 35
Newcastle	580 50
Richibucto	222 66
Sackville	241 40
Shippegan	5 86
St. Andrews	99 84
St. John	5,160 40
St. Stephen	72 52
Total	8,745 93
Nova Scotia.	
Amherst	409 21
Annapolis	146 58
Antigonish	3 42
Arichat	101 58
Baddeck	16 74
Carried forward	677 53

Nova Scotia—Concluded.	$ cts.
Brought forward	677 53
Barrington	24 98
Bridgetown	1 52
Digby	160 92
Guysboro'	77 52
Halifax	6,859 90
Kentville	11 38
Liverpool	103 68
Lockeport	73 16
Londonderry	19 74
Lunenburg	401 58
Margaretsville	7 46
North Sydney	1,095 08
Parrsboro'	632 02
Pictou	393 30
Port Hawkesbury	89 24
Port Medway	79 22
Shelburne	35 46
Sydney	1,780 56
Truro	18 18
Weymouth	124 52
Windsor	1,081 90
Yarmouth	331 24
Total	14,080 09
British Columbia.	
Nanaimo	2,522 67
New Westminster	30 80
Vancouver	1,488 10
Victoria	1,236 84
Total	5,278 41
Prince Edward Island.	
Charlottetown	377 42
Summerside	64 08
Total	441 50

RECAPITULATION.

Quebec	$10,760 36
New Brunswick	8,745 93
Nova Scotia	14,080 09
British Columbia	5,278 41
Prince Edward Island	441 50
	$39,306 29

F. GOURDEAU,
Accountant.

WM. SMITH,
Deputy Minister of Marine.

APPENDIX No. 13.

MONTREAL DECAYED PILOT FUND.

HARBOUR COMMISSIONERS OF MONTREAL, SECRETARY'S OFFICE,
MONTREAL, 31st December, 1889.

WM. SMITH, ESQ.,
Depy. Minister of Marine, Ottawa.

SIR,—I have the honour, by direction of the Harbour Commissioners of Montreal, to transmit herewith for the information of the Honourable the Minister of Marine, tho usual statements of receipts and disbursements of the Montreal Decayed Pilot Fund for the year ended 31st December, 1889, and of the assets belonging to the fund at 31st December, 1889.

The following is an abstract of the former.—

Receipts.

From Trinity Dues collected at Montreal	$2,407 28	
do do Sorel	62 82	
do do Three Rivers	46 14	
From sundry small amounts	33 13	
From interest on Investments and on Cash in Bank.	2,533 86	
		$5,083 23

Disbursements.

Paid Pensions to old and infirm Pilots and widows of Pilots	4,172 49	
do Riddell & Common, for audit of Fund	25 00	
do Printing, Postage and Stationery	11 19	
		4,208 68
Showing a net increase for the year of		$874 55

Mr. Joseph Léveillé, of Montreal, who was superanuated on 1st January, 1888, did not draw his pension during that year, but received the whole of it in January of this year.

The widow of Pilot Moïse Biron died on the 13th February.

Pilot George Raymond, of Deschambault, in June asked that he might be placed on the retired list and grented his pension, on account of failing health. His application being accompanied by a physician's certificate that Mr. Raymond had had an attack of apoplexy, and that he might have another at any time, it was decided to superannuate him as from 1st July.

There are now six old Pilots and sixteen Widows of Pilots drawing pensions from the Fund, the former receiving $300.00 each, and the latter an average of about $144.00 each, per annum.

I have the honour to be, Sir,
Your obedient servant,

ALEXANDER ROBERTSON,
Secretary.

DR. ALEXANDER ROBERTSON, Treasurer, in account with the Decayed Pilot Fund. CR.

1889.		$ cts.
Jan. 2	To Balance from December, 1888	937 69
	Six months interest on the shares of the City of Montreal Consolidated Fund, registered in the name of the Harbour Commissioners of Montreal (viz. $5,000, interest 5 per cent. per annum)	125 00
do 30	Harbour Commissioners Coupons, due 5th January :—	
	Series M, Nos. 154-156=3×$32.50 $ 97 50	
	do N do 36- 43=8×$65.00 520 00	
	do P do 81=1×$60.00 60 00	
	do R do 20-102=2×$15.00 30 00	
	do R do 117-119=3×$30.00 90 00	
	do D do 21=1×$25.00 25 00	
	do D do 45- 49=5×$25.00 125 00	
	do F do 164-172=9×$20.00 180 00	
		1,127 50
May 31	Trinity dues for May	245 44
June 4	Poundage on H.M.S. "Pylades," in and out	4 14
do 7	do Steamer "Modjeska," up	1 25
do 20	do do "Guy Colin"	0 33
do 29	Trinity dues for June	341 96
July 3	Six months interest at 5 per cent. per annum on the fifty shares of the City of Montreal Consolidated Fund	125 00
do 4	Poundage on yacht "Ladoga," up	0 66
do 12	Harbour of Montreal Coupons, due 5th July :—	
	Series M, Nos. 154-156=3×$32.50 $ 97 50	
	do N do 36- 43=8×$65.00 520 00	
	do P do 81=1×$60.00 60 00	
	do R do 20-102=2×$15.00 30 00	
	do R do 117-119=3×$30.00 90 00	
	do D do 21=1×$25.00 25 00	
	do D do 45- 49=5×$25.00 125 00	
	do F do 164-172=9×$20.00 180 00	
		1,127 50
do 23	Poundage on S.S. "British Prince."	0 25

1889.		$ cts.
Jan. 23	By Pension paid for thirteen months from 1st January, 1888, to 1st February, 1889, to Old Pilot Joseph Leveillé, Montreal	325 00
	Pensions paid to the following for three months ended 31st January :—	
Feb. 1	Widow David Mathieu, Grondines	32 00
	do Olivier Abelle, Montreal	37 33
	do Hubert Lemai do	37 33
	do Zéphirin Mayrand, Contrecœur	37 33
	do Moïse Biron, Three Rivers	29 33
	do Zéphirin Boudreau, Three Rivers	37 33
	do Edouard Boudreau do	37 33
	do Isaie Beaudry, Sorel	37 33
	do David Bouille, Deschambault	32 33
	do Edouard Naud, Sorel	32 00
	do Eusébe Toupin, Three Rivers	32 00
	do Placide Gaillardet, St. Gregoire	37 33
	do Narcisse Bouille (nee Arcand), Deschambault	37 33
	do Narcisse Bouille (nee Proulx) do	37 33
	do Sévére Belisle, Deschambault	37 33
	do Olivier Raymond, Montreal	37 33
	do Hector Hamelin, St. Pierre les Becquets	37 33
	Old Pilot Adolphe Lisé, Batiscan	75 00
	do Joseph L. Dessureau, Sorel	75 00
	do Onésime Naud, Sorel	75 00
	do J. B. Dorval, Cap de la Magdeline	75 00
April 1	Riddell & Common, for audit of this Fund, for the year ended 31st December, 1888	25 00
	Pensions paid to the following for three months ended 30th April :—	
May 1	Old Pilot Adolphe Lisé, Batiscan	75 00
	Widow Olivier Abelle, Montreal	37 33
	do Hubert Lemai do	37 33
	do David Mathieu, Grondines	32 00
	do Zéphirin Mayrand, Contrecœur	37 33
	do Zéphirin Boudreau, Three Rivers	37 33
	do Edouard Boudreau do	37 33
	do Isaie Beaudry, Sorel	37 33
	do David Bouille, Deschambault	29 33
	do Edouard Naud, Sorel	32 00
	do Eusébe Toupin, Three Rivers	32 00
	do Narcisse Bouille (nee Proulx), Deschambault	37 33
	do Sévére Bellisle, Deschambault	37 33
	Old Pilot Joseph L. Dessureau, Sorel	75 00
	do Joseph Leveillé, Montreal	75 00

					May	3	do Onésime Naud, Sorel	75 00
							Widow Narcisse Bouille (nee Arcand), Deschambault..	37 33
					do	4	do Placide Gaillardet, St. Gregoire	37 33
					do	8	Old Pilot J. B. Dorval, Cap de la Magdeline	75 00
					do	9	Widow Olivier Raymond, Montreal	37 33
					do	23	do Hector Hamelin, St. Pierre les Becquets	37 33
							By Pensions paid to the following for three months ended 31st July :—	
July	27	To Poundage on Yacht "Coquette," up	0 58		Aug.	1	Widow Hector Hamelin, St. Pierre les Becquets	37 33
do	31	Trinity dues for July	434 71				do David Mathieu, Grondines	32 00
Aug.	31	do for August	444 87				do Olivier Abelle, Montreal	37 33
Sep.	2	Poundage on H.M.S. "Tourmaline," up	2 31				do Hubert Lemai do	37 33
do	6	do do "Pylades," up	2 03		do	5	Old Pilot Joseph Leveillé do	75 00
do	10	do do "Tourmaline," down	2 31		do	6	do J. B. Dorval, Cap de la Magdeline	75 00
do	17	do Yacht "Hector" up	2 55		do	6	Widow Olivier Raymond, Montreal	37 33
do	18	do short paid by Messrs. Munderloh & Co	0 40		do	7	do Zéphirin Mayrand, Contrecœur	37 33
do	19	do paid by Messrs. McLean, Kennedy & Co	0 12				do Zéphirin Boudreau, Three Rivers	37 33
do	26	do on S.S. "Cæsar"	2 12				do Edouard Boudreau do	37 33
do	30	Trinity Dues for September	340 94				do Isaie Beaudry, Sorel	37 33
							do David Bouille, Deschambault	29 33
							do Edward Naud, Sorel	32 00
							do Eusèbe Toupin, Three Rivers	32 00
							do Placide Gaillardet, St. Gregoire	37 33
							do Narcisse Bouille (nee Marie Anne Arcand) Deschambault	37 33
							do Narcisse Bouille (nee Hortense Proulx) Deschambault	37 33
							do Sévère Bellisle, Deschambault	37 33
							Old Pilot Adolphe Lise, Batiscan	75 00
							do Joseph L. Dessureau, Sorel	75 00
							do Onésime Naud, Sorel	75 00
							do George Raymond, Deschambault one months pension to 1st August	25 00
					Sep.	18	D. Bentley & Co., for printing	1 19
Oct.	15	To Poundage on H. M. S. "Pylades," down	2 03				By Pensions paid to the following for three months ended 31st October :—	
do	31	Trinity dues for October	364 11					
Nov.	28	do collected at Sorel from June 3 to Oct. 30	62 82		Nov.	1	Widow Hector Hamelin, St. Pierre les Becquets	37 33
do	28	Poundage on barque "Hooding."	1 54		do	1	do Hubert Lemai, Montreal	37 33
do	29	do paid by Messrs. Dobell, Beckett & Co	10 51		do	1	do Olivier Abelle do	37 33
Dec.	17	Trinity dues for November	235 25		do	2	do Edouard Naud, Sorel	32 00
do	20	do collected at Three Rivers from 28th May to 16th October	46 14		do	4	Old Pilot Onésime Naud, Sorel	75 00
					do	5	do Joseph Leveillé, Montreal	75 00
do	31	Interest from Montreal City and District Savings Bank on money at deposit during the year at the rate of 3 per cent. per annum	28 86		do	5	Widow Olivier Raymond do	37 33
					do	5	do David Mathieu, Grondines	32 00
					do	5	do Zéphirin Mayrand, Contrecœur	37 33
					do	5	do Zéphirin Boudreau, Three Rivers	37 33
		Carried forward					Carried forward	

DR. ALEXANDER ROBERTSON, Treasurer, in account with the Decayed Pilot Fund—*Continued.* CR.

1889.		$ cts.	1889.		$ cts.
	Brought forward			Brought forward	
			Nov. 5	Widow Edouard Boudreau, Three Rivers	37 33
			do 5	do Isaie Beaudry, Sorel	37 33
			do 5	do David Bouille, Deschambault	29 33
			do 5	do Eusèbe Toupin, Three Rivers	32 00
			do 5	do Placide Gaillardet, St. Gregoire	37 33
			do 5	do Narcisse Bouille (nee Marie Anne Arcand), Deschambault	37 33
			do 5	do Narcisse Bouille (nee Hortense Proulx), Deschambault	37 33
			do 5	do Sévère Bellisle, Deschambault	37 33
			do 5	Old Pilot, Adolphe Lisé, Batiscan	75 00
				do Joseph L. Dessureau, Sorel	75 00
				do J. B. Dorval, Cap de la Magdeline	75 00
				do George Raymond, Deschambault	75 00
			Dec. 31	Postage stamps and stationery, supplied by the Harbour Commissioners of Montreal, during the year 1889, in remitting Pensions by registered letter	10 00
				Balance to January, 1890	1,812 24
	Total	6,020 92		Total	6,020 92

APPENDIX No. 14.

REPORT OF THE DECAYED PILOT FUND OF QUEBEC FOR THE

QUEBEC, 1889.

SIR,—I have the honour to forward herewith a statement of the receipts and expenditure of the Decayed Pilot Fund of Quebec for the year 1889, also a similar statement of the accounts of the Corporation of Pilots for the present year:

The total receipts of the Corporation of Pilots for the present year amounted to	$119,780 35
And the total expenditure to	24,266 83
Leaving a net balance of	$ 95,513 52
To be distributed between 153 practising pilots, giving each a net dividend of	622 24
One hundred and seventy-two foreign vessels paid	$ 21,581 84
Seven hundred and ninety-eight British vessels paid.	98,198 51
	$119,780 35

I have the honour to be, Sir,
Your obedient servant,

F. X. DION,
Secretary-Treasurer.

WM. SMITH, Esq.,
Deputy Minister of Marine, Ottawa.

STATEMENT of Moneys Received and Disbursed by the Corporation of Pilots for the Decayed Pilot Fund of Quebec, during the Year 1889.

RECEIPTS.	$ cts.	$ cts.
To Balance of 1888	417 19	
Percentage on contributions of pilots	8,564 91	
Interest on investments	3,073 00	
Fines	40 00	
Interest—Savings Bank	15 12	
		12,110 82
EXPENDITURE.		
By Pensions	10,401 81	
Relief	112 26	
Salaries	500 00	
Deposit in Savings Bank	850 00	
Balance on hand	246 75	
		12,110 82
PILOTS RELIEVED BY THE FUND.		
Four Pilots.		
Cyprien Raymond	49 60	
Joseph Pouliot, No. 1	42 66	
Thomas Simard	4 00	
Jean Gobeil	16 00	
		112 26
PENSIONERS AT THE EXPENSE OF THE FUND.		
AMOUNT PAID TO EACH DURING THE YEAR FROM THE 1ST NOVEMBER, 1888, TO THE 1ST NOVEMBER, 1889.—PAID FROM THE 1ST DECEMBER, 1889, TO THE 31ST DECEMBER, 1889.		
Twenty-one Pilots at $110 to $100.		
Frédérick Bernier	102 50	
Laurent Tremblay	102 50	
Dominique Girard	102 50	
François Vézina	102 50	
Frs. Jos. Pouliot, died 29th August, 1889	85 55	
François Noël	102 50	
Yves Sylvestre, died 19th March, 1889	41 10	
Thomas Després	102 50	
Marcel LeBel	102 50	
Laurent Larochelle	102 50	
Cyprien Raymond, superannuated 7th May; died 15th of same month	2 45	
Hilaire Jouvin	102 50	
Pierre Lapierre, superannuated 10th April, 1889	55 55	
Jean Pouliot do 1st November, 1888	102 50	
Gabriel Lachance do 4th July, 1889	32 50	
Joseph Pepin	102 50	
J. Bte. Bernier, superannuated 12th December, 1888	93 33	
Thomas Simard do 15th do	88 75	
Louis Dugal	102 50	
J. Bte. Talbot, superannuated 17th September, 1888, arrears	13 19	
do year	102 50	
George Sansterre, superannuated 12th December, 1888	90 27	
		1,835 19
Ten Pilots at $101 to $92.		
Maurice Pepin	94 25	
Dominique Perrault	94 25	
Louis Fontaine	94 25	
François Thivierge	94 25	
Isaie Marticotte	94 25	
Joseph Morency	94 25	
Pierre Lemieux, superannuated 10th April, 1889	51 11	
Edouard Labrecque	94 25	
Narcisse Forgues, died 4th March, 1889	33 93	
Jean Coulombe	94 25	
		839 04

STATEMENT of Moneys Received and Disbursed by the Corporation of Pilots for the Decayed Pilot Fund of Quebec, &c.—*Continued.*

PENSIONERS AT THE EXPENSE OF THE FUND—*Continued.*	$ cts.	$ cts.
Seven Pilots at $92 to $84.		
mable St. Laurent	86 00	
. Bte. Paquet, arrears	23 00	
do year	86 00	
François Godreau	86 00	
lovis Anctil	86 00	
lexis Vezina	86 00	
ouis Ol. Leclerc	86 00	
braham Després	86 00	
		625 00
Two Pilots at $90 to $82.		
oseph Lavoie	84 00	
vide Dick	84 00	
		168 00
Four Pilots at $88 to $80.		
. X. Corriveau	82 00	
oseph Lapointe, died 2nd March, 1889	28 90	
rs. Pelletier	82 00	
ntoine Roussel	82 00	
		274 90
Two Pilots at $86 to $78.		
lexis Roy	80 00	
élestin St. Pierre, died 4th January, 1889	15 29	
		95 29
One Pilot at $82 to $76.		
. X. Ménard	77 50	
		77 50
Four Pilots at $79 to $73.		
ierre Charest	74 50	
éandre Raymond	74 50	
aul Pouliot	74 50	
. Léon Roy, died 13th February, 1889	22 60	
		246 10
1 Pilot at $47.		
ames Forbes, arrears	11 75	
do year	47 00	
		58 75
WIDOWS OF PILOTS.		
Twenty-three Widows at $68 to $58.		
Vidow o Jacques Tremblay, arrears	17 00	
do do account	31 50	
do Charles Brown	60 50	
do J. Bte. Dion	60 50	
do Charles Chouinard	60 50	
do Louis Joseph Lavoie	60 50	
do Charles Pouliot	60 50	
do Louis Laprise	60 50	
do Maxime Caron, account	31 50	
do Edouard Petitgrew	60 50	

STATEMENT of Moneys Received and Disbursed by the Corporation of Pilots, for the Decayed Pilot Fund of Quebec, &c.—*Continued.*

PENSIONERS AT THE EXPENSE OF THE FUND—*Continued.*	$ cts.	$ cts.
WIDOWS OF PILOTS—*Continued.*		
Twenty-three Widows at $64 to $58—Continued.		
Widow of Alexis Pelletier	60 50	
do Pierre Pepin	60 50	
do Alex. Vaillancourt	60 50	
do Edouard Marcoux	60 50	
do Charles Bernier	60 50	
do Paul Langlois	60 50	
do Alexis Delisle	60 50	
do Pierre Roy	60 50	
do Charles Nolet	60 50	
do Paul Blouin	60 50	
do Yves Sylvestre, superannuated 19th March, 1889	35 76	
do Frs. Jos. Pouliot do 1st September; died 19th March, 1889	14 40	
do Charles Dumas	60 50	
do Laurent Godbout	60 50	
		1.279 66
Seventeen Widows at $64 to $55.		
Widow of Pierre Ruelland	57 25	
do Paul Larochelle	57 25	
do Joseph Raymond	57 35	
do Jean Gobeil, died 3rd March, 1889	21 87	
do Jean Frs. Lamarre	57 25	
do Robert Demers	57 25	
do Pierre Laprise	57 25	
do Michel Morin, on account	43 50	
do F. X. Delisle	57 25	
do Michel Guénard	57 25	
do Barth. Lachance	57 25	
do Hubert Dumas	57 25	
do Cyprien Langlois	57 25	
do Jean Lavoie	57 25	
do Pierre Gourdeau, arrears	16 00	
do do account	43 50	
do F. X. Lachance	57 25	
do Narcisse Forgues, superannuated 4th March, 1889	36 20	
		905 32
Fifteen Widows at $62 to $54.		
Widow of J. C. Adam, died 22nd April, 1889	15 50	
do Michel Fournier	56 00	
do Paschal Dick	56 00	
do Pierre Gourdeau (A.F.)	56 00	
do Bénonie Normand	56 00	
do Damase Babin	56 00	
do Amable Genest, on account	29 00	
do François Rioux	56 00	
do Nicholas Fortin	56 00	
do Marcel Côté	56 00	
do Gabriel Plante	56 00	
do Eustrche Dorion, superannuated 8th January, 1889	44 63	
do Joseph Lapointe do 12th March, 1889	35 83	
do J. E. Adam	56 00	
do Edouard Demers	56 00	
		740 98
Fifteen Widows at $60 to $52.		
Widow of Félix Caron	54 00	
do David Cinq Mars	54 00	

STATEMENT of Moneys Received and Disbursed by the Corporation of Pilots for the Decayed Pilot Fund of Quebec, &c.—*Continued.*

		$ cts.	$ cts.
PENSIONS AT THE EXPENSE OF THE FUND—*Continued.*			
WIDOWS OF PILOTS—*Continued.*			
Fifteen Widows at $60 to $52.—Continued.			
Widow of	Jean Giroux	54 00	
do	Pierre Gourdeau (A.N.)	54 00	
do	Joseph Dupil	54 00	
do	Jean Marcoux, on account	41 00	
do	Thomas Connell, died 19th September, 1889	54 00	
do	Pierre Curodeau	54 00	
do	J. Bte. Tremblay	54 00	
do	Magloire Mercier	54 00	
do	Louis Crépault	54 00	
do	Célestin St. Pierre, superannuated 4th January, 1889	43 35	
do	François Nadeau	54 00	
do	Antoine Boucher	54 00	
do	Vital Charest	54 00	
			786 35
Sixteen Widows at $58 to $50.			
Widow of	Edouard Chevalier	52 00	
do	Thomas Dick	52 00	
do	Denis Flynn	52 00	
do	William Irvine	52 00	
do	Fabien Langelier	52 00	
do	Julien Langlois	52 00	
do	J. Bte. Laroche	52 00	
do	A. Lavoie (L. Me.)	52 00	
do	Henri Lavoie	52 00	
do	Firmin Lévesque, arrears	14 50	
do	do died 7th January, 1889	12 00	
do	Henri Noël	52 00	
do	Fred. Simpson	52 00	
do	Joseph Simpson	52 00	
do	Pierre Ross	52 00	
do	J. Bte. Caron, died 15th October, 1889	49 92	
do	Amable Fournier, on account	27 00	
			779 51
Sixteen Widows at $56 to $48.			
Widow of	L. (M.L.) Asselin, died 7th January, 1889	10 42	
do	Grégoire Bernier, died 17th February, 1889	16 26	
do	Germain Caron	50 00	
do	Jean Dion	50 00	
do	Jean Pelletier	50 00	
do	C. F. Kœnig	50 00	
do	Ovide Lachance	50 00	
do	L. (E.D.) Langlois	50 00	
do	Antoine Michaud, on account	38 00	
do	Pierre Normand	50 00	
do	David Petitgrew	50 00	
do	Benj. Pineau	50 00	
do	John Simpson	50 00	
do	Joseph Lévesque	50 00	
do	P. S. Laprise, died 11th July, 1889	35 47	
do	François Côté	50 00	
			700 15
Five Widows at $48 to $40.			
Widow of	Paul Blouin	42 00	
do	Célestin Côté	42 00	
do	P. Desrosiers	42 00	
do	F. X. Lachance	42 00	
do	Edouard Turgeon	42 00	
			210 00

STATEMENT of Moneys Received and Disbursed by the Corporation of Pilots for the Decayed Pilot Fund of Quebec, &c.—*Concluded.*

	$ cts.	$ cts.
PENSIONS AT THE EXPENSE OF THE FUND—*Continued.*		
WIDOWS OF PILOTS—*Continued.*		
Seven Widows at $40 to $34.		
Widow of Jacques Dandurand	35 00	
do André Keable	35 50	
do Guil. Morency	35 50	
do Magloire Rioux, on account	10 00	
do Pierre Rouleau	35 50	
do J. B. Servant, died 19th April, 1889	28 80	
do Henri Verrault	35 50	
		216 30
Eleven Widows at $38 to $32.		
Widow of Fabien Caron	33 50	
do Magloire Côté	33 50	
do R. Côté, arrears	9 50	
do do account	25 50	
do Antoine Fortier	33 50	
do L. (A.R.) Langlois, on account	25 50	
do Thomas McNeil	33 50	
do Antoine Raymond	33 50	
do George Simard, arrears	38 00	
do do	35 50	
do Louis Thivierge	33 50	
do Alfred Turgeon	33 50	
do Alexis Vézina	33 50	
		400 00
ELEVEN CHILDREN OF PILOTS.		
David Charest (1)	15 00	
Hilaire Couillard, arrears (1)	15 00	
do account	11 25	
W. Petitgrew, Miss Sophie, died 16th January, 1889 (2)	12 54	
Thomas Boutin (1)	15 00	
P. Toussaint (1)	15 00	
F. Dupuis (1)	15 00	
N. Fortin, arrears (1)	7 50	
do year	15 00	
J. Johan (1)	15 00	
Isaac Forbes (2)	27 48	
		163 77
RECAPITULATION OF PENSIONS.		
21 Pilots at $110 to $100	1,835 19	
10 do 101 to 92	839 04	
7 do 92 to 84	625 00	
2 do 90 to 82	168 00	
4 do 88 to 80	274 90	
2 do 86 to 78	95 29	
1 do 82 to 76	77 50	
4 do 79 to 73	246 10	
1 do 47	58 75	
52 Pilots.		
23 Widows at $68 to $58	1,279 66	
17 do 64 to 55	905 32	
15 do 62 to 54	740 98	
15 do 60 to 52	786 35	

STATEMENT of Moneys Received and Disbursed by the Corporation of Pilots for the Decayed Pilot Fund of Quebec, &c.—*Continued.*

RECAPITULATION OF PENSIONS—*Concluded.*	$ cts.	$ cts.
16 Widows at $58 to $50	779 51	
16 do 56 to 48	700 15	
5 do 48 to 40	210 00	
7 do 40 to 34	216 30	
11 do 38 to 32	400 00	
125 Widows.		
11 Children at $15, $12.50	163 77	
		10,401 81

CREDIT.

RECEIPTS—DETAILS.

To Balance of 1888	417 79	
Trustees of the Quebec Roads: 1 year's interest to 1st July, 1889, on $22,800 at 6 per cent	1,368 00	
The City of Quebec: 1 year's interest to 1st July, 1889, on $9,000 at 7 per cent	630 00	
The Treasury Department: 1 year's interest to 1st July, 1889, on $20,000 at 5 per cent	1,000 00	
Estate of P. Boisseau: 1 year's interest from 26th Jan., 1889, on $1,000 at 6 per cent	60 00	
The Corporation of Pilots: 1 year's interest on $300 at 5 per cent	15 00	
Fines	40 00	
The Savings Bank: interest received on current account to 25th March, '89.	15 12	
Received from the Corporation of Pilots	8,380 79	
Received from Pilots acting as captains	184 12	
		12,110 82

DEBIT.

PENSIONS, RELIEF, &C., PAID DURING THE SEASON OF 1889.

By Relief	112 26	
Arrears of pension to 31st Dec., 1888	165 44	
Amount of pay-list of pensions for quarter ended 31st January, 1889	2,894 76	
do do 30th April, 1889	2,487 74	
do do 31st April, 1889	2,516 50	
do do 31st October, 1889	2,337 37	
Salaries of the Secretary-Treasurer and assistant	500 00	
Deposit in Savings Branch of Bank Nationale	850 00	
Balance on hand	246 75	
		12,110 82

STATEMENT OF FUND.

Moneys loaned	53,352 71	
Amount in Savings Bank	850 00	
Amount in Secretary-Treasurer's hands	246 75	
	54,449 46	
To deduct arrears of pensions due at this date	252 72	
		54,196 74

E. & O. E.

F. X. DION.

QUEBEC, 31st December, 1889. *Secretary-Treasurer.*

We, the undersigned, certify to having made a minute examination of the books and accounts of the Decayed Pilot Fund of Quebec, and of having found them correct.

ALFRED COUET, *Accountant.*

LOUIS E. MORIN, TREFFLE SIMARD. } *Auditors.*

APPENDIX No. 15.

REPORT ON THE MARINE AND IMMIGRANT HOSPITAL AT QUEBEC FOR THE FISCAL YEAR ENDED 30TH JUNE, 1889.

MARINE HOSPITAL,
QUEBEC, 31st July, 1889.

The Honourable
The Minister of Marine and Fisheries.
Ottawa.

The Commissioners of the Marine and Immigrant Hospital beg to submit the following report of the institution under their management for the fiscal year ended 30th June, 1889.

The expenditure has amounted to $15,923.04. Of this sum $13,892.77 have been to the charge of the Federal Government; the balance, $2,030.27, coming from the following sources:—

Grant of the Province of Quebec	$1,866 67
Rent of two beach lots	108 00
Board of Patients	54 00
Sale of ashes	1 60

The number of Patients treated during the year has been 351. Of this number 304 have been discharged, 17 have died, and 30 were still in the Hospital on the 30th June. The total number of days has been 9,873, or a mean average of a little over 28 days for each patient.

The Commissioners regret to have to chronicle the loss by death, during the year of the senior member of the Medical Staff, Dr A. Rowand, who rendered efficient services as visiting Physician for over 40 years.

Respectfully submitted,

L. CATELLIER, M.D.,
Acting-Secretary.

MARINE HOSPITAL,
QUEBEC, 31st July, 1889.

RETURN OF PATIENTS TREATED IN THE MARINE AND IMMIGRANT HOSPITAL AT QUEBEC, DURING THE YEAR ENDING 30TH JUNE, 1889.

1. Remaining in Hospital 1st July, 1888—	
Seamen	28
Immigrants	5
Residents	13
2. Admitted from 1st July, 1888, to 30th June, 1889—	
Seamen	183
Immigrants	26
Residents	96
3. Total treated during the year—	
Seamen	211
Immigrants	31
Residents	109
4. Discharged—	
Seamen	183
Immigrants	29
Residents	92
5. Died—	
Seamen	5
Immigrants	1
Residents	11
6. Remaining in Hospital 30th June, 1889—	
Seamen	23
Immigrants	1
Residents	6
7. Number of days in Hospital—	
Seamen	4,571
Immigrants	223
Residents	5,079

L. CATELLIER, M. D.,
Resident Physician.

MARINE HOSPITAL,
QUEBEC, 25th July, 1889.

REPORT ON ST. JOHN MARINE HOSPITAL.

The Honourable
The Minister of Marine and Fisheries,
Ottawa.

ST. JOHN, N. B., 29th October, 1889.

SIR,—In obedience to your wish, expressed in my appointment as commissioner to examine into complaints preferred against the management of the Kent Marine Hospital in this city, I have the honour to say that, taking into consideration the strong feeling that exists in this community regarding the management of the institution—coupled with contradictory assertions—I have deemed it expedient to take the evidence under oath, and I herewith transmit the statements made for your consideration.

I find the building an excellent one in every respect, well located, with sufficient ground about it to insure pure air. In a sanitary point of view it is all that can be desired, but the fence surrounding the ground is in a dilapidated condition, requiring considerable expenditure to make it such as it should be.

There are two wards, each containing an air space of 14,280 cubic feet, with ten beds, affording upwards of 1600 cubic feet to each patient. They are clean, well lighted and ventilated, and possess radiating surface sufficient to heat them in all weathers. The beds are clean and comfortable, though an improvement is desirable in the shape of spiral wire springs under the mattresses, being easier to lie upon, and requiring a mattress not half the thickness of those in use, which soon become hard in consequence of the unyielding slats under them.

The staff comprises the Surgeon, the Steward, a male nurse, a stoker to attend the furnace, a female cook, and the Steward's wife acts as Matron. One nurse is sufficient under the rules that convalescents shall assist him when required. I do not find a House Surgeon. I may say that no hospital is perfect without one. While the Steward informs me that he can and does perform minor surgical operations, such as using the catheter, dressing wounds, &c., still, not being educated for that work, should an accident occur under his hands a grave responsibility might fall upon those in authority. In the absence of a House Surgeon there should be a telephone.

Regarding the complaints against the management and the food given to the patients, I find that ladies have been in the habit of visiting the institution. Some of them have obtained and exercised the right to do so at inconvenient hours, regardless of the protest of the Steward, and with the best intentions in the world—but with mistaken zeal—have assumed the position of commissioners by questioning and receiving complaints from patients. I would not restrain the patient from complaining, or the visitor from listening; but when a complaint has been made, its correctness should be immediately tested by a proper investigation before the party accused. I cannot find that this has been done in a single instance. Nor can I find that an individual visitor has examined the food, or can speak from personal observation. Consequently, all they know about the matter has been gleaned from statements made to them by the patients, none of whom are in the city.

That the visitors have correctly reported the statements made to them by the sailors I have not a doubt, and it is quite possible that there may have been grounds for complaint; but having neglected to take the only means for testing the correctness of the statements made to them by the men, who, when discharged from the hospital, are not easily found, it therefore becomes a grave question whether they have not been deceived.

That they have been deceived may be inferred from the evidence, and from the fact that those who complained most loudly had, or fancied they had, suffered a wrong at the hands of the Steward. Wm. Fisher was discharged for insulting the cook; the credibility of his evidence is destroyed upon the face of it. His mother did the washing; she was discharged for writing an impudent note to the Matron. Two men by the names of Slate and Ashe were refused admission to a concert, and threatened the Steward for so doing. Slate carried out his threat by taking some meat and potatoes to the *Globe* newspaper office. He was in the city for days since this investigation commenced, and received my summons to attend and give evidence, but failed to appear. The statement made in his affidavit to you regarding his discharge from the hospital is flatly contradicted by Dr. Christie and the Steward.

Visitors have been in the habit of taking in delicacies to the sick, sometimes with the sanction of the doctor, sometimes without. The Steward has incurred the odium of some for carrying out the very proper order of the doctor not to admit such articles without his knowledge.

It also appears that kindly-disposed ladies have been in the habit of organizing concerts, collecting sailors from the various ships in the harbour, and holding them, sometimes in the ward with the sick, sometimes in one of the rooms. When so doing—having obtained the sanction of Mr. Harding—they ignored the Steward, which has created friction.

The propriety of holding concerts in a hospital is very questionable. Under no circumstances should they be held in a ward among the sick, and when held within hearing distance might be objectionable to many. As a rule, when an individual can

enjoy music and singing he is in a fit state to leave the hospital. For these reasons I recommend that they be discontinued.

It is pleasing and comforting to the sick to see the kindly faces and sympathetic interest taken in them by the lady visitors. I would, therefore, by all means encourage such visits; but for various reasons the visits should be made at a fixed hour in the day, and not prolonged more than 15 or 20 minutes.

I find the diet list liberal enough, but the appetites of convalescents vary much. The practice of doling out a fixed amount to each man at the table has its objections. One is a large eater; another a small one. The pride of the large eater would not allow him to take that which the small eater has left. I therefore think it would prevent grumbling by placing the food in bulk on the tables.

You will see by the copy of the diet list I send you of our General Public Hospital here that we do not restrict the quantity, believing that the better we feed the convalescents the shorter time we will be obliged to take care of and feed them.

The practice of paying a contractor so much a day for feeding the sick man is objectionable—obviously, in the absence of direct supervision—for, however well he may carry out his contract, there will be grumblers, who, from the nature of the agreement, will feel that it is the contractor's interest to make all he can out of them. This suspicion will often be father to the idea that they are not fed as well as they should be.

The Steward declares positively that he has given the food strictly according to the diet list; that he or his wife weighed it out daily, and that the quality was the best he could get. He acknowledges that the potatoes were bad for a few days in September, 1888, and the doctor corroborates his statement as regards the mid-day meal. I have personally questioned the sick at present in the hospital, who declare the food as good as they have received in other hospitals. In the absence of proof to the contrary, I am bound to believe them. But I have not relied upon their testimony alone. I have had before me contractors for the groceries, the bread and the meat, all trustworthy men, who have declared, as you will see by their testimony, that the supplies they have furnished were of the best. It so happens that the same parties supply the General Hospital here, and I can vouch for the quality given to it. It is hard to arrive at the exact quantity used each day, except from the testimony of the steward. I have selected the months of August, September and October, 1888. The baker tells me that during those months he left at the hospital about nine 2-lb. loaves a day. The butcher declares that during the same period he left 1,246 lbs. of meat. You will observe from the testimony, this was to furnish 1,145 full diets, besides that eaten by his family, and exclusive of fish days. If this is true, and I see no reason to doubt it, it goes far to prove that the lady visitors have been deceived by the men.

It appears that the collector and Mr. Harding, who grant tickets of admission to the hospital, exercise no supervision over its management. This I think an error. While I believe the Steward and the doctor perform their duties faithfully, still, a local supervising committee would increase confidence in the institution and tend to prevent grumbling.

You will observe by the evidence of Dr. Harding that he thinks money should be expended upon the hospital buildings on Partridge Island, to make them fit to receive the sick. In view of the fact that the island lies about three miles from the city, a medical man living in the city cannot, in all weathers, give the sick placed there the attendance they should receive. I therefore suggest that any sick persons arriving in the harbour, labouring under contagious disease, be placed in the hospital for contagious diseases in the city. It would cost less, and the patient would be better cared for.

I have the honour to be, Sir
Your obedient servant,

W. BAYARD.

APPENDIX No. 16.

REPORT OF INVESTIGATION *RE*-WRECK S. S. "MONTREAL."

The Merchant Shipping Act, 1854 *to* 1876.

In the matter of a formal investigation held at the Harbour Commissioner's Office, Quebec, on the 11th and 12th days of September, 1889, before William Henry Smith, R.N.R., Chairman of the Board of Examiners, Commissioner, assisted by Captain James Wylie and Captain J. S. Wilson, assessors, into the circumstances attending the loss of the crew steamer "Montreal," of Liverpool, on the south-west point of Belle Isle upon the 4th day of August last, on a voyage from Montreal to Liverpool.

Report of the Court.

The Court having carefully inquired into the circumstances of the above mentioned shipping casualty, having heard the testimony of the witnesses, examined the documents laid before them, after due deliberation, finds that the stranding of the said vessel was occasioned :

1. By the dense fog prevailing for a long time previous to and at the time of the accident.

2. The irregularity of the currents and the numerous icebergs which the vessel encountered, making it necessary to continually change the course of the ship, in order to avoid the aforesaid dangers.

From the evidence adduced it is plain that the master had placed great reliance on hearing the sound of the signal gun of Belle Isle. The members of the crew of the wrecked steamer who have been examined are unanimous in stating that the gun was not heard before the accident on the night in question, but no explanation has been given to the satisfaction of the court why the gun was not heard.

The court is of opinion that a more southerly course might have been steered after passing Cape Norman, but it is obvious from the evidence that it was difficult to ascertain the exact course the ship was making, owing to the density of the fog and numerous icebergs surrounding the ship. The court is satisfied that the master and his officers adopted every measure and precaution to guard against the action of the forces with which they had to contend. The fact is established that during ten hours the vessel only made a distance of some twenty-four miles, clearly showing that every effort that prudence and care could dictate was made by the master to navigate his vessel with safety in the trying position in which he was placed.

Under these circumstances, the court, having taken into consideration the high recommendations made before it by legal representatives of the Dominion Steamship Company, and considering the good character heretofore borne by the master for sobriety and careful navigation, is of opinion that it is not necessary to deal with the certificate of the said master.

(Signed) WM. H. SMITH, R.N.R.,
Commissioner.

Quebec, 13th September, 1889.

We concur in the above report.

(Signed) JAMES WYLIE,
J. S. WILSON,
Assessors.

ANNEX TO REPORT OF COMMISSIONERS APPOINTED TO HOLD A FORMAL INVESTIGATION INTO THE STRANDING OF THE SS. "MONTREAL."

The "Montreal" was a screw steamer, built of iron, at Whiteinch, Scotland, in 1879, and registered the same year at Liverpool. Her official number was 81313, and her dimensions as follows:—Length, 329$\frac{5}{10}$ ft.; breadth, 39$\frac{3}{10}$ ft.; depth, 25$\frac{2}{10}$ ft.; gross tonnage, 3,308; registered tonnage, 2,160. She was the property of the Mississippi and Dominion Steamship Company, and the managing directors are Messrs. Flynn, Main & Montgomerie, James street, Liverpool, England.

At the time of stranding she was in command of Captain Joseph Wall, who holds a Board of Trade certificate of competency as master. She carried four officers and four engineers, with appropriate certificates.

The vessel was fitted with compound engines, the cylinders being 45 x 80 and 48 x 80, and were 375 nominal horse power.

Her crew consisted of 58 seamen, firemen and stewards.

The master has been in the company's service thirteen years, in various capacities; and in actual command for eight years.

The ship has made two voyages to Quebec this season. She left Montreal on the 1st August, at 7:40 a.m., with passengers, cattle, and full cargo of grain, beef, pork, butter, cheese, &c., her bunkers being filled with coal for the intended voyage to Liverpool, being in charge of a duly qualified pilot. Having reached Quebec at 7 p.m. same day, the vessel was stopped in the stream for the purpose of exchanging pilots. At Montreal the master received the usual Custom House clearance, as well as the Port Warden's certificate. The vessel seems to have been well equipped in every respect for the voyage, having passed a Board of Trade inspection at Liverpool in April, 1889. Her boats were in good order and ready for immediate use, and she had a sufficient number of compasses for her safe navigation, which had been examined by the officers while the vessel was lying at Montreal. The errors of these compasses were found from time to time upon previous voyages, and posted in a book for reference; and it was stated that observations for that purpose were taken whenever an opportunity occurred, and I have no doubt the deviations allowed upon the various courses were correct.

Immediately upon leaving Quebec the branch pilot took charge of the vessel under the master's directions, and they steamed down the river, the wind being light and variable, with cloudy weather, and tide four hours flood. The order to proceed at full speed was given to the engineer on duty, and this was kept up until she reached Basque Island, when it became misty, with snow showers, and speed was reduced as a precautionary measure; the fog-whistle was blown at proper intervals, and the master considered it prudent to take soundings, and look-outs were doubled on the forecastle head. The pilot seems to have been satisfied with the courses made by the ship, proving the correct deviation was allowed by the officers. At 10:40 a.m. on the 2nd she reached Bic, and the pilot left the ship in a boat which came off for him from the pilot schooner. From this point the Master took sole charge, and remained upon the bridge until Matane was abeam, when, considering the vessel a safe distance off the land, and having proper courses set, he went to his cabin to rest, having been upon the deck nineteen hours, leaving a certificated officer in charge of the bridge.

Nothing particular occurred until at 11:30 a.m., 3rd August; a dense fog prevailing, they took a cast of the lead, which placed the ship about six miles off Heath Point, Anticosti, and about the same time they heard the gun in that direction. Due precautions appear to have been taken during the intervals of foggy weather, as the vessel's speed was reduced and the fog-whistle sounded according to article 12 (*a*) of regulations for preventing collisions. Upon the 4th August, the weather being clear, at 4 a.m. they passed about 7 miles off Point Riche, Newfoundland, when heavy rain came on, with thunder and lightning. The course was then

shaped for the entrance to the Strait of Belle Isle, and at 8:20 a.m. Point Amour was abeam about 5 miles distant, the weather being gloomy, with heavy rain continuing. This was nearly mid-channel between Newfoundland and Labrador, which is the narrowest part of the Strait, being barely 9 miles across from land to land. From this position the course was set E. by S. by compass, to enable the vessel to pass about 3 miles off Cape Norman, and with her head in this direction, it is stated, the deviation was $\frac{1}{4}$ point westerly, giving an E. $\frac{3}{4}$ S. correct magnetic course. The south shore, or Newfoundland coast, was in sight for 3 hours and 10 minutes, viz., until 11:30 a.m., and as the ship was steaming at the rate of 11 miles an hours, the distance from Point Amour to Cape Norman being $36\frac{1}{2}$ miles, she must have been about 3 miles from a position of being abeam of the lighthouse. About this time the rain appears to have ceased, and, as a result, dense fog set in, which continued more or less until the vessel struck upon Belle Isle. Immediately the fog came on the master, by telegraph from the bridge, ordered the engineer to slow the engines, and a junior officer was added to the look-out upon the forecastle head, which, the master states, is customary according to the rules of the ship. About noon, when going at slow speed, they passed a large iceberg, and, considering ther might be others about, the ship was again stopped, the fog being then very thick. At this time they deemed the ship was from 2 to 3 miles off Cape Norman, having it abeam, bearing S. by W. by compass, and a cast of the lead was taken to verify this assumed position, which gave 30 fathoms with a shell bottom. A slight westerly current was observed by allowing the lead to trail upon the ground. This was a very necessary precaution to ascertain the drift of the current or set of tide.

At 1 p.m. the soundings obtained were 31 fathoms, and at 2 p.m. 32 fathoms. The ship all the time was making very little progress, under her own steam, but moving ahead or astern occasionally to clear icebergs which were very numerous in her track; and the ship's head was directed sometimes to the north and east and at others to the south and east to avoid these dangers. The master was upon the bridge all this time with one of the senior officers, giving directions when necessary. The current was now found to be running to the E. S. E., with a strong set in that direction carrying the vessel towards the entrance and out of the Strait. At 4 p.m. soundings were procured in 31 fathoms, rocky bottom, and shortly afterwards, the fog clearing a little, the engines were set ahead full speed for about a quarter of an hour; but on account of the low pressure of steam in the boilers at the time, the distance run could not have been more than 2 miles, and her way was stopped again at 4.15 p.m., the fog being very dense. As they observed some large icebergs about during the slight interval of a clearance, it appears the master became extremely anxious, and therefore placed other look-outs at certain distances apart along both sides of the ship to give timely warning of the approach of ice, and also to listen for sounds of any kind. At 5 p.m. a cast of the lead showed 30 fathoms, and at 6 p.m., although the vessel could have drifted only a very short distance to the E. S. E., the soundings were changed to a depth of 29 fathoms, rocky bottom. The fog continued very thick, and the trailing line showed the ship still drifting to the E. S. E., and the course of the vessel seemed to be in that direction. At 7 p.m., while they were sounding, a whistle was heard, which the officers took for Cape Bauld fog signal, as they timed it by the chronometer and found the correct intervals; but having no means of ascertaining its exact distance, except by soundings—and these were very little guide to them—it was estimated to be at least 8 miles distant. The same fog whistle was heard regularly for one hour, that is until 8 p.m., when the sound vanished at about the same bearing, S. W. by S. Had a steamer's whistle been blowing, the two vessels would have answered each other to indicate their positions.

At this time the horn upon Cape Bauld could have been at no less a distance than 14 miles, and the ship was not far from the island of Belle Isle. When the sound of the horn was lost the tide seems to have changed to N. W., and the ship's head was directed towards the S. W., to counteract this, soundings being also frequently taken.

No doubt the master must have considered the ship was in sound range of the gun, and expected to hear it, as the attention of the whole of the crew was engaged upon bow, stern and both sides of the ship listening for sounds. The dense fog surrounding them, with the perfect archipelago of icebergs about, would have prevented the sound being carried towards her, as the wind was blowing direct from the ship to the Island.

The affidavit of Therese Colton, wife of the lighthouse-keeper, states the gun was fired regularly every half hour during the time the fog lasted, from the afternoon of the 4th August until 9 o'clock on the morning of the 5th, and it is impossible to understand why it was not heard, unless from the aforesaid reasons.

At 8 p.m. she was steamed dead slow with her head E.S.E. to counteract the flood tide setting to the N.W., and engines were occasionally stopped to deaden her way. At 9 p.m. the deep sea lead showed 34 fathoms, and at 9:30 we are informed they cleared a large iceberg upon the port bow. This must have been the land at the point N.W. of lighthouse, and the vessel, unknown to any of the crew, was without doubt in a very critical position. The steamer was immediately stopped and remained so for 35 minutes. At 10 p.m. 34 fathoms was obtained by the lead, with sand and shell bottom. By inspecting the chart it is seen that 34 fathoms is close to the rocks, being not more than 1 cable off; and the same depth may be found in the position the master placed the ship, or anywhere upon the line of bearing he supposed Cape Rauld to be in.

Most seamen admit that one or two casts of the lead taken at long intervals are not a sufficient guide to ascertain the position of a ship. A line of soundings frequently taken and laid down upon the chart is necessary for any approach to safe navigation.

The log-books and other records kept by the officers were lost; consequently the whole of the evidence is given from memory.

The affidavits of the members of the crew, who left for England, and the evidence of the witnesses given under oath, agree upon all the main points, and go to prove that the necessary precautions of sounding continuously were taken. About 10.5 p.m. the engines were put on dead slow, the ship's head directed to E.S.E. but she had only gone upon that course for five minutes when a sound was heard abaft the port beam like the wash of ice about a large berg. No doubt, this was the same point of land previously mentioned, and mistaken for an iceberg by the crew, and the vessel had evidently been drifting towards it again, with the tide, which is stated to have been setting to the north-west at that time.

The sound appearing to draw more to the bow of the vessel, the engines were ordered to be set on full speed ahead and the helm hard to port, to endeavour to cant her head off and clear the danger; but before much headway was made, the engineer received orders by telegraph from the bridge to reverse full speed. These orders were promptly obeyed, but the ship forged ahead and struck forward, the bow remaining firmly fixed on what appeared to be an immense iceberg looming in the fog, and forming a bay which the vessel had entered.

From the testimony of the passengers and crew the vessel does not appear to have touched with any great force, as no particular shock was felt on board. She struck at 10:20 p.m., about half a cable's length from the landing place, with her head pointing to the S.E. An effort was made by the master to get the vessel off by turning the engines astern; but the carpenter being ordered to sound the forepeak, immediately reported it to be full of water, and shortly after he found 5 feet of water in the fore and main holds. The engineers were then stoppod to prevent the ship sliding off into deep water and foundering with all hands. The subsequent acts of the master and officers seem to have been characterized by judgment and coolness in the trying position in which they were placed.

The attention of Captain Wall was now directed to the saving of the lives of those on board, as the ship was in a most perilous position, with a heavy swell coming in making the vessel thump heavily. The crew were mustered upon the deck and told off to their respective boats, which were supplied with provisions, compasses,

lamps, &c., and in twenty five minutes after stranding the whole of the women and children, and the rest of the passengers, cattlemen and crew, were safely placed in the boats without a single mishap, at once showing good discipline to have existed, and every precaution taken to ensure the safety of the lives of all on board. The master was the last to leave the ship, going off in one of the gigs.

At 1:30 a.m., August 5th, the flash of a gun was observed, and they then knew the ship was ashore on the rocks at Belle Isle. About 2:30 a.m., they saw a lantern swinging on shore, high up in the fog, and soon after a boat approached, which guided the captain's gig into the landing. He afterwards boarded the vessel, and ran a hawser to the shore, to enable them to pass to and from the ship. Rockets were immediately sent up to attract the attention of the other boats, and fishermen despatched to different points uyon the coast to ascertain if possible their position. Some endeavor was made to save provisions, but, as the crew had not returned, very little was landed, and the ship soon after filled with water and settled down, making it difficult to remain on board.

About daylight the boats with passengers and crew came in, and all were safely landed. The passengers were conducted to the lighthouse, and the wants of the women and children properly attended to by Mrs. Cotton and servant. The keeper found accommodation for the officers in his dwelling. The crew, with the cattlemen, were comfortable, sheltered in the storehouses and sheds near the landing.

At the time of stranding, Mr. Johnson, 4th engineer, was in charge of the engines.

The testimony given by him in his evidence, and corroborated by the affidavit of the chief engineer, is in accord with the master's statements.

No doubt the engines were often stopped, and at other times going slow during the period we have been informed by the witnesses.

Everything was done to ascertain the drift, and the fact of the master not being able to keep his position must be partly attributed to the uncertainty of the amount the ship would forge ahead after the engines were stopped, which was difficult for the officers to estimate.

From a careful summing up of the evidence, and reviewing all the circumstances in connection with the stranding of the said vessel, the assessors and myself have come to the conclusion that all necessary and reasonable precautions were taken in the navigation of the ship as could possibly be expected under the circumstances, from the time the master took charge at Bic (where the pilot left) until the casualty occurred.

The regulations respecting speed were carefully complied with; a proper and efficient look-out was kept, soundings were frequently taken, and the lead left to trail upon the ground to find how the line trended and ascertain the direction of the drift.

No kind of reasoning could justify a high rate of speed under such circumstances. From the testimony produced, this charge cannot be brought against the master, as the evidence proves conclusively the vessel only made a distance of twenty-four miles in ten hours, and if the testimony given by the witnesses can be relied on, a large portion of this was due to current during the period the vessel was stopped.

The officers probably placed too much dependence on the gun, and, no doubt, the confidence they placed in hearing the same, before approaching danger, contributed in a measure to the casualty. No reflections, however, can be cast upon the lighthouse-keeper, as his wife makes affidavit that the gun was fired.

The master is therefore not considered guilty of any wrongful act or default in this disaster, and accordingly his certificate has not been dealt with.

The other certificated officers are also exonorated from blame.

Judgment was given in open court on the 13th September, 1889, and a copy handed to the master, Joseph Wall.

WM. H. SMITH,
Commissioner.

There is a circumstance in connection with this disaster which I feel it my duty to bring to the notice of the Minister of Marine, as the master and officers seem to lay great stress upon it.

On the 8th August, H. M. ship "Emerald" stopped off the light house and sent a boat ashore with an officer in charge, who asked the master if any assistance was required. Capt. Wall replied, saying, "he would like to have a diver to ascertain the condition of his vessel." He also stated that most of his crew had been sent to Quebec, retaining only a few to protect the steamer until assistance should arrive. This assistance, it is presumed, was expected from his agents at Quebec, The officer was further informed, that as the passengers were at the lighthouse there was no need of immediate assistance.

The evidence of the master and other witnesses seems directed to cast some reflections upon the captain of the "Emerald," and the master specially endeavoured to put a construction upon the actions of the officers of that ship which might go far to prove that the circumstances which occurred afterwards, in connection with the wreckers, might possibly have been avoided had the "Emerald" remained near the lighthouse. It is stated they were surprised to see the "Emerald" steam away when her boat returned.

With regard to these insinuations, I am at a loss to see what the captain of that ship could have done, in view of the statement of the master of the "Montreal" that he was not in need of immediate assistance, and at that time we are informed that no wreckers were about.

No doubt the presence of a few armed men would have had a beneficial effect in keeping off the pirates, but I cannot say what instructions the officers of H. M. ships have received as to their interference upon such occasions. Had there been a necessity of saving life, I am of opinion her officers would have acted promptly and humanely.

The following day some wreckers boarded the vessel, and defying the seamen, plundered her. Later on they came into the cove with their schooners and anchored, then made their boat fast alongside of the steamer, and swarmed on board in large numbers. They intimidated the crew, stole the deck fittings, sails and gear, and with hatchets and crowbars destroyed large portion of the decks in their indeavour to get at the cattle and sheep. Ropes were put down the opening and boxes of cheese and various articles of cargo were secured and immediatly removed from the steamer. The master and crew were utterly powerless, in the presence of greatly superior numbers; consequently, the wreckers took complete control.

While these disgraceful scenes were transpiring on board the vessel, other illicit acts were being perpetrated on the shore. The cattle and sheep which had previously been safely landed were hunted about the Island, caught and killed, the carcasses dragged down the cliffs, where boats were in readiness to receive them. Similar scenes have occurred whenever a vessel has been lost in the Straits of Belle Isle, either upon the Labrador or Newfoundland coasts.

It is difficult to find a remedy for these piratical acts in such isolated positions, but one means of assisting to trace and detect the men who are guilty of such crimes would be to have all fishing vessels registered with numbers upon their sails. This would afford an opportunity to the owners of vessels placed in a like unfortunate position to bring these men before the courts and inflict a well-merited punishment upon them.

WM. H. SMITH,
Commissioner.

HALIFAX, 3rd December, 1889.

THE FOLLOWING QUESTIONS WERE SUBMITTED TO THE ASSESSORS BY THE COMMISSIONER AT THE CLOSE OF THE EVIDENCE.

Q. What number of compasses did she carry? Where were they placed? Were they in good order and sufficient for the safe navigation of the ship? A. Seven. Standard upon the chart room, steering in the wheelhouse, one upon the poop, others in the after wheelhouse and some spare compasses. We consider they were in good order.

Q. When and by whom were they made, and by whom were they last adjusted? A. By Bassnett, of Liverpool, and adjusted by him in 1887.

Q. Did the master or any of the officers ascertain the deviation of the compasses from time to time? A. Yes; according to the evidence, they did so.

Q. Were the errors of the same posted in a book for reference, and were the proper corrections applied to the courses? A. Yes.

Q. Was a safe and proper course set from Greenly Island to the entrance of the Straits of Belle Isle, and how far did it take the ship off Point Amour? A. Yes. Five miles off Point Amour.

Q. Did the master see the land near Point Amour? A. He saw the light-house.

Q. When was the course altered? A. 8:20 a. m. 4th August.

Q. Was it a safe and proper one to clear Cape Norman, and was due allowance made for current and deviation of the compass? A. The log-book being lost, the courses have been given from memory; the master and officers state it was E. by S. Due allowance was made for current and deviation.

Q. What courses were steered from the time the ship was supposed to be off Cape Norman? Were these courses correct, and was the deep-sea lead kept constantly in use to verify the ship's position? A. Any progress made was in an E. S. E. direction, partly due to a current apparently setting out of the Strait. The deep-sea lead was properly attended to and left to trail upon the ground when the ship was stopped to ascertain the drift, which was E. S. E., until 7 p. m., and N. W. afterwards.

Q. Was the master upon deck when the safety of the vessel required his personal supervision? A. Yes.

Q. Having regard to the density of the fog and the probability of numerous icebergs being scattered about the Straits, was the vessel navigated at too great a rate of speed? A. No.

Q. Was a good and proper look-out kept from Father Point to Greenly Island; and were any extra precautions taken when entering the Strait, and at the time the dense fog came on and while it lasted? A. Yes; during fog extra men were placed on the look-out, and an officer upon the forecastle head; when the vessel was stopped others were placed at certain distances apart, on both sides of the ship.

Q. Taking into consideration the fact that Cape Norman lighthouse was not sighted, therefore the distance off not being exactly ascertained, was it prudent for the master to proceed any further towards Belle Isle, knowing the soundings were unreliable, and numerous icebergs being about? A. It appears he only proceeded when they could see to keep clear of icebergs; it was not safe to anchor on account of the drifting bergs.

Q. Whether, on hearing the fog-horn upon Cape Bauld, it would have been more prudent for the master to have shaped a course towards it, and proceeded at a very slow and cautious rate of speed, with the lead going, until the sound became more pronounced, and remained in that position while the fog lasted, the chart indicating that the land about Cape Bauld was bold, and could be approached within one mile in safety in thirty-eight fathoms of water? A. He states it was impossible to direct the course of the ship to any point and keep her so, on account of being compelled to move in various directions to avoid icebergs.

Q. Taking all these matters into proper consideration, was the stranding and loss of the said vessel due to the wrongful acts and defaults of the master, or any of the officers of the said ship? A. No.

Q. Whether the conduct of one or more of the certificated officers, during the time the vessel was being navigated through the Strait of Belle Isle, shows any act committed, or duty omitted, which contributed in any way whatever to the loss of the said vessel? A. We think not.

Q. What was the cause of the stranding of the vessel? A. In our opinion, the stranding of the "Montreal" was caused by misfortune, brought on by the ship being placed in a perilous position, surrounded by numerous icebergs, in a dense fog, which necessitated a frequent change of the vessel's course to avoid these dangers. The master thereby lost his position, and, no doubt, placed much reliance on hearing the gun upon Belle Isle before drifting into danger.

(Signed) JAMES WYLIE,
" J. S. WILSON,
Assessors.

APPENDIX No. 16*a*.

HALIFAX, 30th October, 1889.

SIR,—I beg to inform you that in conformity with your instructions, I held an investigation at Belle Isle on the 16th instant.

From the evidence given by Mr. Cotton, copy of which is herewith enclosed, I have come to the conclusion that the gun was fired from 3 a. m. of the 4th August till 9 a.m. of the 5th August. There is no doubt whatever in my mind that at the time of the stranding of the "Montreal" (within the dates mentioned) the gun was fired regularly and at the usual intervals. Some fishermen, stationed in a small cove, saw the steamer go on the rocks and hastened to inform the light-keeper, who at once dispatched his own men with them to render all the assistance in their power. Later on he himself followed by a shorter route down the cliffs, leaving his wife in charge of the station, with instructions to fire the gun. Mrs. Cotton did load and fire the gun at the stated times, until the men returned. This is proved by evidence from other sources than that of her husband. The fact of the woman firing the signal upon that dreadful night, in the absence of the men, who had gone to the wrecked vessel for the express purpose of saving life, redounds much to her credit, and should have aroused more generous impulses in the master and his owners. For a woman to leave the lighthouse on such a dark and foggy night to load and fire a gun some distance from the dwelling required an amount of courage seldom found in the sex, and she should be commended for it.

The men were successful in guiding the captain's boat to the landing, and afterwards instrumental in finding the other boats, which had been driven round the point, nearly losing their lives in climbing over the cliffs for that purpose.

I may state that while I was at Quirpon, Cape Norman and other places, I made inquiries of every person I thought capable of giving me information respecting the weather, the amount of ice in the Strait, and as to whether the fishermen generally place confidence in the light-keeper; and the conduct of the keeper always met with approval.

I beg to draw your attention to some discrepancies between the statement of Captain Wall, in his deposition, and that of the light-keeper at Cape Norman, in reference to the state of the weather at noon of the 4th August. The former asserts that at 11.30 on the 4th fog came on, and that at noon of that day, it being very dense, the vessel's engines were stopped, when the officers estimated the distance off Cape Norman to be two or three miles. The journal of the light-keeper (from which I took extracts) shows the wind was light from south all that day and no fog seen on the horizon; and this condition of the weather continued for some days. No steamer was in sight from the lighthouse from 10 a.m. until the afternoon, or at any time during the hours mentioned by Captain Wall. The keeper and his staff clearly saw some icebergs a long way off, and two or three small vessels were observed in the offing. This goes to prove that the "Montreal" passed Cape Norman at a much greater distance than estimated by her officers. The keeper also informed me that in the distance they saw something like a bank of fog stretching from Cape Onion obliquely across the Straits to the Labrador Coast. This would lead me to infer that the vessel was enveloped in that fog bank, and the master had no means of ascertaining his distance off the land except by soundings. Under these circumstances, with the current drifting to the E.S.E. for some time and the continual changing of the course to avoid icebergs, sometimes to the north and at others to the south, the vessel was borne in the direction of the island and was actually to the north-west of the lighthouse point. In this position, being hemmed in by immense icebergs, with a dense fog resting upon them, filling up every crevice, at the same time having the

high bluff point of land intercepting the sound of the gun, it would have been a surprise had the report been audible.

A further proof of the ship being to the north of her track may be had by inspecting the rough sketch handed me by Mr. Cotton (copy enclosed), showing that on the 3rd of July the greater number of icebergs were to the north of a mid-channel course from Cape Norman to the sea.

With reference to the position of the signal, I would recommend the present gun remaining where it is, and the placing of another near the lower lighthouse. I am also of opinion that explosive bombs would be most useful, as being projected some distance from the cliff the sound would meet with no obstruction.

The high and the low gun, with the bombs, should be tested next season, and the best signal selected.

I can see no advantage in having the gun fired at shorter intervals than at present.

I have the honour to be, Sir,
Your obedient servant,

WM. H. SMITH.

Wm. Smith, Esq.,
Deputy Minister of Marine.

APPENDIX No. 16*b*.

HALIFAX, 26th October, 1889.

SIR,—I have the honour to inform you, that in obedience to the instructions contained in your letter, dated the 30th September, and subsequent telegram of the 11th October, I joined the S.S. "Napoleon III" at Pictou on the latter date, and started for Belle Isle the same night. After stopping at various lighthouses to land the usual supplies, we reached Belle Isle early on the morning of the 16th, but as the wind and sea were both increasing from W.N.W. the captain deemed it prudent to wait for a more favourable opportunity to land the stores, and accordingly crossed over to Cape Bauld. Here again it was found that a heavy swell was setting into the landing cove, which made it dangerous for the "Napoleon" to come to anchor, and we were obliged to take shelter in Quirpon harbour for the night. Early the following morning, 17th October, we weighed anchor and proceeded towards Cape Bauld.

The steamer was moored in the small cove to S. E. of lighthouse, and during the time the crew were landing the supplies I went to the lighthouse and held an investigation into the alleged carelessness of the keeper, Mr. St. Lawrent, in not sounding the horn on the 7th and 8th August, as reported by Captain Williams, of the S.S. "Oregon."

As the precise time of this alleged negligence is not mentioned, but dates 7th or 8th August only, named in Messrs. Flinn, Main and Montgomery's letter, I was unable to specify any fixed hour when the "Oregon" had been "two miles off Cape Bauld, and the fog was so intense that Captain Williams could not see the lighthouse, yet no fog signal was sounded."

In reading over this part of the letter, I was somewhat puzzled to understand how Captain Williams could know he was two miles off Cape Bauld while enveloped in a dense fog. It does not appear to me that I could have had such wonderful facilities for observing so accurately his distance off the land; and it is rather difficult to reconcile his statements. Had he qualified his assertion by explaining that the fog cleared off while he was near the land, and he had thus an opportunity of observing how close his ship had been to it, his report would carry greater weight of conviction. Even if the "Oregon" had been so close to the Cape it is quite possible that a point of land or icebergs may have intercepted the sound of the horn; or the atmospheric conditions may not have been favourable to its transmission.

To enable me to make a most searching inquiry into the matter, I included the dates 7th, 8th and 9th of August, and the evidence taken is herewith enclosed (copy).

In answer to my questions, I find that on the 7th August, the wind being light and variable from W. to E., there was no fog seen from the station.

On the 8th, wind being light from S.E. and cloudy weather, but no fog. On the 9th at 7 a.m. fog came on and continued until noon, when heavy rain set in and dispersed it, the rain continuing till midnight. During the five hours fog, from 1 a.m. until noon of that date, the horn was regularly sounded, according to instructions, and I inspected the record of the signals so given, as posted in the log-book, from which I took extracts. Independent of enclosed evidence, I made inquiries from fishermen, coasters and others, as well as from residents of Quirpon village, and they all spoke in the highest terms of the value of the fog-alarm upon Cape Bauld to their vessels when approaching the coast. They also stated that whenever fog came on they were convinced that the alarm was properly attended to. Many of them had frequently heard it in the harbour and in the adjacent harbour of Griquette. Sometimes it had even been heard at Belle Isle, and at others nearly over to the coast of Labrador in a N.W. direction from Cape Bauld, between Cape Norman and Belle

Isle; and if the statement of Captain Wall is credited, he and his look-out men on board the ill-fated S.S. "Montreal" heard the horn and timed it, bearing S.W. by S. at 7 p.m. on the night of the 4th August, and at that time it must have been 14 miles off.

Having availed myself of all sources from which reliable information was to be gained, I am now thoroughly convinced that the lighthouse-keeper at Cape Bauld has faithfully attended to the responsible duties imposed upon him; and the service of the horn has never been interrupted at any time during the prevalence of fog.

With regard to the report of Captain Williams, of the "Oregon," I should conclude that he had probably been in fog during the time he was approaching the land, and may have expected to sight either Belle Isle or the Newfoundland coast should the fog lift. Being then totally uncertain of his position, a dense bank of fog may have appeared to him like land (not an uncommon occurence in these waters), and he may have mistaken this for Cape Bauld, but all the evidence I have obtained goes strongly to prove that at no time, either on the 7th or 8th August, was the "Oregon" in the position indicated in the captain's letter.

I have the honor to be, Sir,
Your obedient servant,

WM. H. SMITH.

Wm. Smith, Esq.,
Deputy Minister of Marine.

APPENDIX No. 17.

DEPARTMENT OF MARINE.

Revenue and Expenditure since Confederation.

Revenue.	Fiscal Year ending 30th June.	Expenditure.	Remarks.
$ cts.		$ cts.	
71,811 08	1868	371,070 56	
75,351 25	1869	360,899 90	
71,490 06	1870	367,129 11	
70,254 12	1871	389,537 12	
79,324 18	1872	518,958 49	The Department assumed the building of lights and fog whistles formerly constructed by the Public Works, over $80,000 was spent.
144,756 19	1873	706,817 92	Prince Edward Island and British Columbia entered Confederation which increased maintenance of lights, $85,000, and construction, $55,000.
108,349 57	1874	845,159 09	The Meteorological Service was started, steam communication between Prince Edward Island and an increase of $20,000 in Marine Hospitals.
91,235 34	1875	844,586 09	
107,984 42	1876	979,146 27	$20,000 was paid for steamer Glendon, and $64,997.23 for Newfield with increases in Water Police and Steamboat Inspection.
105,906 53	1877	820,054 38	
100,850 69	1878	786,156 23	
84,143 65	1879	755,359 47	
91,941 68	1880	723,360 89	
108,304 49	1881	761,730 62	
109,124 77	1882	774,831 53	
104,382 83	1883	824,910 82	
118,079 60	1884	927,241 61	$56,000 was paid for Princess Louise and the survey Georgian Bay was started.
101,267 71	1885	1,029,901 14	Hudson Bay expedition, $71,000, and Steamer Lansdowne, $47,000.
91,884 69	1886	973,360 13	
102,238 14	1887	917,557 31	
99,920 18	1888	883,250 85	
99,939 81	1889	1,023,801 34	Steamer Stanley, $143,595.60.
2,138,540 98		16,584,820 87	

F. Gourdeau,
Accountant.

WM. SMITH,
Deputy Minister,

SUPPLEMENT

OF THE

TWENTY-SECOND ANNUAL REPORT OF THE DEPARTMENT OF MARINE, BEING FOR THE FISCAL YEAR ENDED 30TH JUNE, 1889.

REPORTS

OF THE

CHAIRMEN OF THE BOARDS OF

STEAMBOAT INSPECTION

AND EXAMINERS OF MASTERS AND MATES,

THE

TORONTO, MONTREAL, QUEBEC AND PICTOU

HARBOUR COMMISSIONERS,

THE PILOTAGE AUTHORITIES,

THE HARBOUR AND SHIPPING MASTERS, CERTAIN PORT WARDENS, TOGETHER WITH STATEMENT OF WRECKS AND CASUALTIES AND LIST OF REWARDS FOR SAVING LIFE,

CHIEFLY UP TO THE

31st DAY OF DECEMBER, 1889.

PRINTED BY ORDER OF PARLIAMENT.

OTTAWA:
PRINTED BY BROWN CHAMBERLAIN, PRINTER TO THE QUEEN'S MOST EXCELLENT MAJESTY.

1890.

SUPPLEMENT.

OTTAWA, 15th April, 1890.

The Hon. CHARLES H. TUPPER,
Minister of Marine and Fisheries.

SIR,—I have the honour to submit herewith Supplement to the Twenty-second Annual Report of the Department of Marine, being for the year 1889, containing the Reports of the Chairmen of the Board of Steamboat Inspection, and Examiners of Masters and Mates, the Reports of the Harbour Commissioners for Toronto, Montreal, Quebec, Three Rivers, Pictou and North Sydney, the Reports of the Pilotage Authorities, of Harbour and Shipping Masters and Port Wardens, together with Statement of Wrecks and Casualties and List of Rewards for Saving Life.

The usual statement relating to Merchant Shipping will be published with the List of Vessels on the Register Books of the Dominion of Canada, and will form another Supplement to the Annual Report.

I have the honour to be, Sir,

Your most obedient servant,

WM. SMITH,
Deputy Minister of Marine.

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APPENDIX No. 1.

STEAM Vessels Inspected for the Year ended 31st December, 1889.

WEST ONTARIO AND HURON DIVISION.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
Alberta	500	Mar. 21	1,779	79 16	Screw, passengers.
Athabasca	500	do 21	1,774	78 96	do do
L. Shickluna		April 3	626	30 04	do freight.
Frank Jackman		do 4	39	6 56	do tug.
Dolphin		do 4	13	5 22	do do
Bruno		do 8	475	24 00	do freight.
Cambria	250	do 11	937	45 48	Paddle, passengers.
Carmona	375	do 9	980	47 20	do do
Campana	300	do 9	1,288	59 52	Screw do
Meteor	40	do 10	337	21 48	Paddle do
W. J. Aikens		do 11	42	6 68	Screw, tug.
Heather Belle		do 11	20	5 80	do fish tug.
Atlantic	318	do 12	683	35 32	do passengers.
Baltic	307	do 12	1,324	60 96	Paddle do
Pacific	311	do 12	918	44 72	Screw do
Northern Belle	250	do 12	513	28 52	do do
Welcome		do 12	21	5 84	do fish tug.
Ethel		do 12	13	5 52	do do
James Storey		do 12	49	6 96	do tug.
Ann Long		do 12	45	6 80	do do
Hiawatha		do 12	39	6 56	do do
Grace Darling		do 12	28	6 12	do fish tug.
Imperial	20	do 17	245	17 80	do passengers.
G. A. Ranney		Not certified	14	5 56	do fish tug.
S. C. Doty		April 15	26	6 04	do do

STEAM Vessels Inspected, &c.—West Ontario and Huron Division—*Con.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
G. P. McIntosh		April 16	58	7 32	Screw, fish tug.
John William		do 16	15	5 60	do do
Interocean		do 17	148	14 24	do freight and tug.
Shawanaga		do 22	96	8 83	do tug.
Fred. Davidson		do 23	43	6 73	do do
C. W. Chamberlin		do 23	385	20 40	do freight.
Anderson		do 26	15	5 60	do fish tug.
Mabel		do 24	11	5 45	do tug.
Waubaushene		do 25	97	8 88	do do
Severn		do 25	44	6 76	do do
*Juanita		Not certified	5		do yacht.
Maganettawan		April 26	208	18 76	do tug.
Marshall & Murray		do 26	16	5 64	do do
H. L. Lovering		do 26	55	7 20	do do
F. B. Maxwell	300	do 27	497	27 88	Paddle, passengers.
Cherokee	30	do 27	179	15 16	Screw do
Thames		do 27	76	8 04	do freight.
Chicora	772	May 2	931	45 24	Paddle, passengers.
Cibola	1176	do 2	962	46 44	do do
Mocking Bird	40	do 4	38	6 52	Screw do
Kincardine		do 4	199	16 96	do freight.
Maggie May		do 6	46	6 84	do tug.
J. L. McEdwards	116	do 8	21	5 84	do passengers.
Gertrude	163	do 8	76	8 04	do do
M. A. Laughlin		do 13	23	5 92	do tug.
Mascotte	128	do 15	49	6 96	do passengers.
John Hanlan	172	do 15	37	6 48	do do
Canadian	340	do 15	231	17 24	Paddle do
Ongiara	250	do 15	98	8 92	Screw do
Arlington	100	do 15	23	5 92	do do
Kathleen	290	do 15	109	12 40	do do

* The Juanita was remeasured at Collingwood and found to be less than three tons.

STEAM Vessels Inspected, &c.—West Ontario and Huron Division.—*Con.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
Chicoutimi	278	May 16	110	12 40	Paddle, passenger.
Wm. M. Alderson	200	do 27	121	12 84	Screw do
Rupert	480	do 18	512	28 48	Paddle do
Dixie	40	do 15	37	6 48	Screw do
Nautilus	40	do 21	9	5 36	do do
C. H. Merritt	330	do 23	121	12 84	do do
Greyhound	418	do 29	337	21 48	do do
Lillie	132	June 5	50	7 00	do do
Truant	100	do 6	23	5 92	Screw do
Ada Alice	64	do 6	15	5 60	do do
R. Kendrick	40	do 7	15	5 60	do do
Siesta		Not certified	3	5 12	do do
Esperanza		June 11	22	5 88	do yacht.
Clara		do 12	12	5 48	do freight.
Favourite	333	do 12	491	27 64	do passengers.
Nipissing	100	do 17	275	19 00	Paddle do
Oriole	40	do 17	75	8 00	Screw do
Muskoka	40	do 18	99	8 96	do do
Lake Joseph		do 18	28	6 12	do tug.
Dauntless		do 18	7	5 28	do do
Kenozha	200	do 19	191	15 64	do passengers.
Ethel May		do 19	4	5 16	do tug.
Jennie Wilson		do 19	7	5 28	do do
Lady of the Lake	30	do 19	10	5 40	do passengers.
Onaganoh	25	do 19	19	5 76	do do
Rosseau		do 20	53	7 12	do tug.
Bertha May		do 20	20	5 80	do do
Sunbeam		Not certified	4		do do
Edith May		do	49		do passengers.
Kate Murray		do	4	5 12	do do
Longford	40	June 19	53	7 12	do do
Orillia	224	do 24	135	13 40	do do

STEAM Vessels Inspected, &c.—West Ontario and Huron Division.—*Con.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross. Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
Southwood	40	June 24	19	5 76	Screw, passengers.
Gypsy		do 24	20	5 80	do yacht.
Conqueror		do 25	25	6 00	do tug.
Comet		do 25	20	5 80	do do
Island Queen	100	do 27	23	5 92	do passengers.
Rescue		do 28	7	5 28	do yacht.
Port Elgin Queen		July 3	37	6 28	do tug.
Agnes		do 3	23	5 95	do do
James Clark		do 4	48	6 92	do fish tug.
Zephyr		do 13	19	5 76	do yacht.
Abeona		do 8	46	6 84	do do
Manitoba		Not certified	2,639	112 60	do passengers.
Annie Watt		July 11	62	7 48	do tug.
Halcro		Not certified	8	5 32	do yacht.
Enterprise	188	June 27	148	13 92	do passengers.
Sea Flower		July 16	7	5 28	do yacht.
Isabella		do 17	44	6 76	do tug.
Queen	20	do 11	7	5 28	do passengers.
Adrelexa		do 24	15	5 60	do tug.
Resolute		do 25	139	10 56	do do
Maud	40	do 25	18	5 73	do passengers.
Bruce		Not certified	16	5 64	do tug.
Tender	30	July 30	30	6 20	do passengers.
Mary Beck		do 30	16	5 63	do tug.
Maud S		Aug. 5	14	5 56	do do
Northern	30	do 8	99	8 96	Paddle, passengers.
Florence	21	do 8	8	5 32	Screw do
Mary Louise	23	do 9	64	7 56	do do
Herbert M		do 9	26	6 04	do tug.
Wenonah	62	do 8	161	14 44	do & paddle, pass'r
Lady Katrine		do 13	16	5 64	do tug.
Cecebe		Not certified	11		do do

STEAM Vessels Inspected, &c.—West Ontario and Huron Division—*Con.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
Sweet Mary		Aug. 24	13	5 52	Screw, tug.
Douglas		do 24	5	5 20	do do
Copananing		Not registered			do do
S. R. Nordrop		do			do do
Maggie McLean		Not certified	37		do do
Alfred Morrell		Aug. 28	40	6 60	do do
Ida		Not certified			do do
Minnie Martin		Aug. 28	10	5 40	do do
Mizpah		Sept. 5	18	5 72	do fish tug.
Rosamond		do 13	23	5 92	do yacht.
P. M. Campbell		do 11	49	6 96	do tug.
Home Rule		do 19	3	5 10	do do
Eagle		do 19	12	5 48	do do
			23,975	1,678 37	

W. J. MENEILLY,
Steamboat Inspector.

Steam Vessels Inspected for the Year ended 31st December, 1889.

WEST ONTARIO DIVISION.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
Ben Millwood		Nov. 12	10·75	5 88	Screw wheel, tug.
Alpha		Oct. 18	34·09	6 36	do
Jennie G. Harper		do 19	20·00	5 80	do
Hattie Vinton		None issued	55·27	7 20	do
Annie Clark		Oct. 28	50·71	7 00	do
W. L. Davis		None issued	45·72	8 68	do
Evangeline		Oct. 30	23·60	5 92	Screw wheel, yacht.
Algoma		None issued	31·96	7 56	Screw wheel, tug.
Othello		Oct. 31	7·54	6 20	do
Clara Hickler		None issued	41·97	8 36	do
Albert Dyment		do	No regis'r.	6 20	do
Vixen		Nov. 2	68·22	7 72	do
George Maythan		None issued	40·00	6 60	do
Fanny Arnold		Nov. 4	73·47	7 92	do
George Dean		None issued	No regis'r.	5 40	do
John Harrison		do	43·61	6 76	do
Frank Reed		Nov. 8	34·10	6 36	do
Bob Foote		do 9	39·46	6 60	do
Siskiwit		None issued	47·17	6 88	do
Superior		do	88·51	8 56	do
			756·15	137 96	

EDWARD ADAMS,
Steamboat Inspector.

Steam Vessels Inspected for the Year ended 31st December, 1889.

WEST ONTARIO AND HURON DIVISION.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
Saginaw		Mar. 30	357	19 28	Screw, wrecking tug.
United Lumbermen		do 30	399	20 96	do freight barge.
Alert		April 3	47	6 88	do tug.
Hector		do 3	43	6 72	do do
W. A. Rooth		do 3	52	7 08	do do
Inez		do 4	59	7 36	do do
R. S. King		do 4	58	7 32	do do
A. B. Cook		do 4	34	6 36	do do
Golden City		do 5	35	6 40	do do
Tecumseh		do 9	840	38 60	do freight barge.
Persia	150	do 9	757	38 28	do passenger.
Ocean	150	do 9	684	35 36	do do
Dominion		do 9	478	24 12	do freight barge.
Canada	35	do 10	644	33 76	do passenger.
Acadia	100	do 10	806	40 25	do do
Lake Michigan		do 10	693	32 72	do freight barge.
Celtic	30	do 11	698	35 92	do passenger.
Isaac May		do 12	558	27 32	do freight.
Africa		do 12	482	24 28	do do
Mary		do 12	62	7 48	do tug.
Sylvester Neelon		do 12	46	6 84	do do
James Armstrong		do 12	45	6 76	do do
Sir S. L. Tilley	10	do 13	1,178	55 12	do passenger and freight.
Metamora		do 13	239	14 56	do tug.
Sam Perry		do 13	52	7 00	do do
Harvey Neelon		do 13	65	7 56	do do
W. B. Hall		do 15	608	29 32	do freight.
Clinton		do 8	430	22 20	do do
United Empire	396	do 17	1,961	86 44	do passenger.
Ontario	200	do 17	1,338	61 52	do do
W. S. Ireland		do 18	105	9 20	do freight.

STEAM Vessels Inspected, &c.—West Ontario and Huron Division—*Continued.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
City of Chatham	553	April 18	341	21 64	Screw, passenger.
City of Dresden	25	do 19	194	15 76	do do
Advance		do 19	72	7 88	do freight, tug.
Lakeside	491	do 20	348	21 92	do passenger.
Alma Munro	125	do 22	891	43 64	do do
Enterprise		do 23	915	41 60	do freight.
Maggie A. Bennett		do 23	34	6 36	do tug.
James Norris		do 23	50	7 00	do do
Edward Blake		do 25	13	5 52	do do
Cuba	125	do 26	931	45 24	do passenger.
Myles		May 4	1,211	53 44	do freight.
Erin		do 6	512	25 48	do do
Umbria		do 7	43	6 72	do tug.
Lewis Shickluna		do 7	16	5 64	do do
Maggie		do 7	37	6 48	do do
Maggie R. Mitchell		do 7	40	6 60	do do
Joe Mac		do 7	44	6 76	do do
Lothair		do 10	413	21 48	do freight.
Hope	350	do 10	170	14 80	do ferry.
Onaping		do 11	256	15 24	do tug.
Telegram	25	do 11	322	20 88	do passenger.
Union	150	do 16	267	18 68	Paddle, ferry.
J. W. Stienhoff	317	do 17	312	20 48	Screw, excursion.
Macassa	539	do 18	459	26 36	Twin-screw, passenger.
Mazeppa	300	do 18	146	13 84	Screw, passenger, ferry.
Sadie	327	do 20	154	14 16	Paddle do do
Queen of the Isles	50	do 20	40	6 60	Screw, passenger.
Luella	122	do 17	38	6 52	do ferry.
Thames	300	do 21	82	8 28	Paddle, excursion.
City of London	300	do 21	79	8 16	do do
Hastings	388	do 24	473	26 92	do do
Huron	300	do 29	1,052	50 08	Twin-screw, car ferry.

STEAM Vessels Inspected, &c.—West Ontario and Huron Division—*Continued.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
International	300	April 29	851	42 04	Twin-screw, car ferry.
Byron Trerice		May 30	268	15 72	Screw, tug.
Maid of the Mist	100	June 5	62	7 48	do passenger ferry.
St. Magnus	30	do 7	853	41 12	do passenger.
City of Stratford		do 10	6	5 24	do tug.
Nellie May		do 11	11	5 44	do fishing tug.
Uncle John		do 11	7	5 28	do do
Ruby	40	do 11	72	7 88	do passenger tug.
Lottie Maud		do 12	10	5 40	do fishing tug.
Conservative		do 12	7	5 32	do do
Kingfisher		do 12	14	5 52	do do
Ontario		do 14	57	7 28	do tug.
Kittie Haight		do 14	60	7 40	do do
W. J. Taylor		do 14	9	10 72 / 2 years	do despatch boat.
Admiral		do 18	9	5 36	do tug.
City of Mt. Clemens		do 19	102	9 08	do freight.
Ripple		do 19	20	5 80	do tug.
W. F. McRae		do 19	46	6 84	do do
Sea Gull		do 20	41	6 64	do do
Willie Scagel		do 20	22	5 88	do do
Mary		do 20	4	5 16	do do
Grace Darling		do 20	26	6 04	do do
Euna		do 20	6	5 24	do do
Ariadne		do 20	38	6 52	do do
Harry Sewell		do 21	25	6 00	do do
Frankie		do 21	24	5 96	do yacht.
R. F. Child		do 21	5	5 20	do do
Butcher Boy		July 3	94	13 56	do freight barge.
Spray		do 4	15	5 60	do fishing tug.
Verbena May		do 4	5	5 20	do tug.
P. Cress		do 4	63	7 52	do freight barge.
Maud L			14	5 56	do tug.

STEAM Vessels Inspected, &c.—West Ontario and Huron Division—*Continued.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
James Leighton		July 4	23	5 92	Screw, tug.
Eagle		do 4	14	5 56	do do
Modjeska	720	May 21	455	26 20	Twin-screw, passenger.
		1889.			
Prowett Beyer	26	Nov. 30	10	5 41	Screw, ferry.
		1890.			
Maggie Mason	40	July 8	56	7 31	do do
Blandina		do 9	46	13 68	do pleasure yacht.
Starlight	40	do 10	16	2 years 5 64	do passenger tug.
F. A. Folger			64	7 56	do tug.
Lurline		July 11	66	7 64	do pleasure yacht.
Harold Gauthier		do 12	9	5 36	do fishing tug.
Juno		do 12	210	13 40	do freight barge.
Nina		do 13	11	5 44	do fishing tug.
Alfred Wilson		do 13	33	6 32	do tug.
La Belle		do 23	75	8 00	do freight barge.
Storm King		do 25	108	9 28	do tug.
Charlton		do 26	261	15 44	do do
Myrtle	30	do 30	9	5 36	do passenger.
Ivey Alderson	100	Aug. 3	39	6 52	do do
E. Windsor		do 7	86	8 44	do freight.
Spray		do 7	47	6 88	do tug.
J. B. Newman		do 8	33	6 32	do freight.
Arbutus		do 8	49	6 96	do tug.
Energy		do 9	116	9 64	do freight.
Undine		do 14	17	5 68	do pleasure yacht.
Gordon Jerry		do 20	124	9 96	do freight.
A. Chambers		do 22	23	5 92	do fishing tug.
Cucas		do 22	28	6 12	do do
Juno		do 22	28	6 12	do do
George Douglas		do 22	42	6 68	do tug.
J. H. Jones		do 23	208	13 32	do fishing tug.
		1889.			
Myrtle		Dec. 1	81	8 25	do do
		1890.			
Oreadia		Aug. 23	23	5 92	do do

STEAM Vessels Inspected, &c.—West Ontario and Huron Division—*Continued.*

Name of Vessel.	Number of Passengers allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
W. H. Siebold		Aug. 23	22	5 88	Screw, fishing tug.
James Buckley		do 28	10	5 40	do do
Owen		do 30	103	9 12	do freight barge.
International		do 31	82	8 28	do tug.
Lansdowne	300	Sept. 11	1,571	70 84	Paddle, car ferry.
Great Western	300	do 10	1,080	51 20	do do
A. H. Jennie		do 12	148	10 92	Screw, freight barge.
Lillie Smith		do 30	302	17 08	do do
Ella Taylor		Dec. 1 1889.	34	7 72	do tug.
W. M. German	40	Oct. 3 1890.	28	7 24	do passenger tug.
P. S. Hiesordt		do 4	45	6 80	do tug.
E. J. G. Munro		do 9	43	8 44	do do
Algonquin		do 14	1,805	152 48	do freight.
Hiawatha	300	do 24	163	14 48	do passenger ferry.
Messenger		do 25	15	5 60	do tug.
Severn Belle		do 29	8	5 28	do do
Saucy Jim		do 29	93	12 44	do do
Pocahontas		do 31	32	6 28	Paddle do
Minnehaha		Nov. 12	32	6 28	Screw do
Uncle Jim		do 14	11	5 32	do do
Howard B. Payne		do 23	33	7 64	do do
Leslie			11		do do

O. P. ST. JOHN,
Steamboat Inspector.

Steam Vessels not Inspected for the Year ended 31st December, 1889.

WEST ONTARIO AND HURON DIVISION.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	Dues and Fees.	Remarks. — Why not Inspected and Class of Vessel.
			$ cts.	
Bertha Endress	32	24	6 28	Screw, tug, no application.
Dispatch	33	22	.....	do fishing tug, whereabouts unknown.
Electric	4	3	.....	do yacht, laid up.
Gordon Gauthier	26	18	6 04	Fishing tug, unable to get to vessel.
Henry Smyth	40	27	6 60	do do
John Hunter	32	.....	.....	Tug, getting new boiler.
Jessie	118	65	.....	do not running.
J. C. Clark	145	99	.....	Passenger, not running.
Excelsior	35	24	.....	Tug do
Maid of the Mill	8	6	.....	Yacht.
Minnie Kidd	18	12	.....	Tug, not running.
Myrtle	9	6	.....	do whereabouts unknown.
Lady Eberth	3	1	1 12	do out of reach.
Notos	16	11	.....	Yacht, whereabouts unknown.
Ontario	11	8	5 44	Tug, failed to meet.
Phœnix	37	25	6 52	do inspection prevented by bad weather.
Rambler	59	20	.....	do not running.
River Belle	8	5	.....	Yacht do
Ranger	8	5	5 64	do
Rock	14	10	.....	Fishing tug, failed to meet.
Rover	51	35	7 00	Tug.
Sovereign	684	426	.....	Passenger, not running.
Sutton Belle	6	4	.....	Tug, whereabouts unknown.
Purvis	13	9	.....	Fishing tug.
Irene	24	16	.....	Yacht, no application.
Walter Scott	26	18	6 04	Fishing tug, unable to get to vessel.
Wales	350	238	33 00	Freight tug, laid up.
Tempest	Not registered.		5 36	Unknown.
Rosedale	1,040	659	46 60	Steel, screw, freight.

W. J. MENEILLEY,
O. P. St. JOHN,
Steamboat Inspectors.

Steam Vessels Inspected for the Year ended 31st December, 1889.

WEST ONTARIO DIVISION.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
Advance	30	April 5	72·37	7 88	Screw; Lake St. Clair and Amherstburg.
Hope	350	do 5	169·96	14 80	do ferry; Windsor and Detroit.
Bruno		do 8	474·98	24 00	do freight; all the lakes.
Clinton		do 8	430·00	22 20	do do do
Carmona	373	do 9	979·93	47 20	Paddle; Owen Sound and Sault Ste. Marie.
Campana	300	do 9	1,287·09	59 52	Screw; Sarnia and Duluth.
Cambria	250	do 10	739·26	44 16	Paddle; Owen Sound and Sault Ste. Marie.
Meteor	40	do 10	336·61	21 48	do all the lakes.
Alberta	500	Mar. 21	1,779·33	79 16	Screw; Owen Sound and Port Arthur.
Athabaska	500	do 21	1,773·65	78 96	do do do
Africa		April 12	482·39	24 28	Screw; all the lakes.
Issac May		do 12	558·28	27 32	do do
Tecumseh		do 9	839·67	38 60	do do
Sir S. L. Tilley	10	do 12	1,777·77	55 12	do do
Dominion		do 9	478·13	24 12	do do
W. B. Hall		do 15	607·70	29 32	do do
Atlantic	318	do 12	682·63	35 32	do Collingwood and Sault Ste. Marie.
Pacific	311	do 12	918·08	44 72	do do do
Northern Belle	250	do 12	322·21	28 52	do Collingwood and ports on Georgian Bay.
United Empire	396	do 18	1,960·67	86 44	do Sarnia and Duluth.
Ontario	200	do 18	1,103·91	61 53	do do
City of Dresden	25	do 19	193·87	15 70	do Rondeau and Sandusky.
United Lumbermen		Mar. 30	398·91	20 69	do all the lakes.
Acadia	100	April 10	806·36	40 25	do do
Celtic	30	do 11	698·04	35 92	do do
L. Shickluna		May 7	625·81	30 04	do do
Persia	150	April 9	756·64	38 28	do St. Catharines and Montreal.
Ocean	150	do 9	683·72	35 36	do do do
Alma Munroe	125	do 23	890·82	43 64	do Montreal and Chicago.
Interocean			147·83	14 24	do
Baltic	307	April 12	1,323·77	60 96	Paddle; Collingwood and Sault Ste. Marie.

STEAM Vessels Inspected for the Year, &c.—West Ontario—*Continued.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
Enterprise		April 23..	914·92	41 60	Screw; all the Lakes.
Erin		May 6..	512·22	25 48	Screw; all the lakes.
Canada	35	April 27..	444·45	33 76	do do
Cuba	125	do 26..	931·13	45 24	do Montreal and Chicago.
Kincardine		May 4..	198·67	12 86	do Kingston to Georgian Bay.
Mocking Bird	40	do 4..	38·02	6 52	do Owen Sound and Presqu'ile.
Gertrude	163	do 8..	75·54	8 04	do Toronto; ferry.
J. L. McEdwards	116	do 8..	21·40	5 84	do do
Lothair		do 10..	412·92	21 48	do all the lakes.
Lakeside	491	April 20..	348·22	21 92	do Sarnia and Kingsville.
Telegram	25	May 11..	321·59	20 88	do Rondeau and Lake Erie ports.
Chicora	772	do 2..	930·50	45 24	Paddle; Toronto and Niagara.
Macassa	539	do 14..	459·06	26 36	Screw; Toronto and Hamilton.
Union	150	do 15..	266·96	18 68	Paddle; Fort Erie and Black Rock.
Dixie	40	do 15..	37·02	6 48	Screw; Niagara River.
Chicoutimi	273	do 16..	100·47	12 40	Paddle; Toronto and Lorne Park.
Luella	122	do 17..	37·83	6 52	Screw; Toronto and Island.
Mascotte	128	do 15..	48·94	6 96	do do
John Hanlan	172	do 15..	36·96	6 48	do do
Canadian	340	do 15..	230·51	17 24	Paddle do
Mazeppa	300	do 18..	145·59	13 84	Screw; Hamilton and B. Beach.
Queen City	250	do 15..	97·77	8 92	do Toronto and the Island.
Thames	300	do 21..	81·72	8 28	Paddle; London and Spring Bank.
City of London	300	do 21..	78·88	8 16	do do do
Queen of the Isles	50	do 22..	40·22	6 60	Screw; Toronto and Long Branch.
Rupert	480	do 18..	511·97	28 48	Paddle do do
Kathleen	200	do 23..	109·82	12 40	Screw; Toronto and Island.
Arlington	100	do 15..	23·37	5 92	do do do
C. H. Merritt	330	do 23..	121·58	12 88	do Toronto and Long Branch.
J. W. Steinhoff	463	do 17..	311·80	20 48	do Lake Ontario Ports.
Sadie	377	do 20..	154·18	14 16	Paddle; Toronto and Island.

STEAM Vessels Inspected for the Year, &c.—West Ontario—*Continued.*

Name of Vessels.	Number of Passengers allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
Hastings	537	May 24..	473·35	26 92	Paddle, Toronto and ports on Lake Ontario.
Lake Michigan		April 10..	693 07	32 72	Screw; all the lakes.
Huron	300	May 31..	1,052·41	50 08	Screw; G. T. R. ferry.
International	300	do 31..	850·92	42 04	do do
Cibola	1,176	do 2..	961·47	46 44	Paddle; Toronto and Niagara.
Lillie	132	June 5..	49·53	7 00	Screw; Niagara Falls.
Maid of the Mist	100	do 5..	61·97	7 48	do do River.
St. Magnus	30	do 7..	852·95	41 12	do all the lakes.
Nautilus	40	do 8..	8·65	5 36	do Welland and Port Dalhousie.
Modjeska	720	do 15..	454·98	26 20	do Toronto and Hamilton.
Favorite	333	do 17..	491·33	27 64	do Owen Sound and Parry Sound.
Southwood	40	do 19..	18·78	5 76	do Lake Couchiching.
Orillia	224	do 20..	134·59	13 40	do Lake Simcoe.
Longford	40	do 20..	53·29	7 12	do Lake Couchiching.
Imperial	20	April 17..	245·10	13 88	do Collingwood and Georgian Bay.
Ada Alice	64	June 6..	15·43	5 60	do Toronto, ferry.
Truant	100	do 26..	23·31	5 92	do do
F. B. Maxwell	300	April 27..	497·11	27 88	Paddle; Midland and Parry Sound.
Island Queen	100	June 27..	23·31	5 92	Screw; Toronto, ferry.
Enterprise	188	do 27..	148·19	13 92	do Lake Simcoe.
Cherokee	30	April 27..	179·33	15 16	do Georgian Bay.
W. M. Alderson	200	May 27..	121·19	12 84	do Meaford and Lion's Head.
City of Chatham	553	April 18..	340·54	21 64	do Chatham and Windsor.
Ruby	40	June 11..	72·22	7 88	do Port Stanley.
Grayhound	418	May 29..	337·03	21 49	do Toronto and Grimsby.
Kenozha	200	June 19..	191·53	15 64	do Muskoka Lakes.
Lady of the Lakes	30	do 19..	10·35	5 40	do do
Oriole	40	do 17..	74·79	8 00	do do
Onaganoh	25	do 19..	18·73	5 70	do do
Muskoka	40	do 18..	98·98	8 96	do do
Nipissing	100	do 17..	275·45	19 00	do do
The Queen	20	July 11..	6·63	5 28	do Lake Simcoe.

STEAM Vessels Inspected for the Year, &c.—West Ontario—*Continued.*

Name of Vessel.	Number of Passengers allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
Maggie Mason	40	June 8..	24·95	7 21	Screw; Burlington Bay.
		1889.			
Prowett Beyer	40	Nov. 30..	10·14	5 41	do do
		1890.			
Ivey Alderson	100	July 16..	38·67	6 52	do Port Dover and Port Ryerson.
Inter Ocean	.....	do	147·83	14 24	
Star Light	40	do 10..	15·98	5 64	do Detroit.
Alfred Wilson	.....	....	32·80	6 32	do
Myrtle	33	July 30..	9·40	5 36	do Howard Lake.
Wenonah	62	Aug. 8..	160·60	14 44	Paddle; Burks Falls and River.
Florence	21	do 9..	8·42	5 32	Screw; Huntsville and Vicinity.
Mary Louise	23	do 9..	63·62	7 56	do Trading Lake.
Northern	30	do 10..	98·63	8 96	Paddle; Huntsville and Vicinicy.
C. W. Chamberlin	.....	April 23..	384·93	20 40	Screw; all the lakes.
R. Kendrick	40	June 7..	14·96	5 60	do Lake Simcoe.
Juno	.....	July 12..	209·50	13 40	do all the lakes.
Algonquin	.....	Aug. 24..	1,805·61	152 00	do do
Rosedale	.....	do 30..	1,040·49	46 60	do do
Manitoba	.....	.....	2,639·31	112 60	do
Lansdowne	300	Sept. 10..	1,570·90	70 84	do G. T. R. ferry.
Great Western	300	do 10..	1,000·33	51 08	do do
Lillie Smith	....	do 30..	302·31	17 08	do all the lakes.
W. M. German	40	Oct. 3..	27·85	7 24	do Welland Canal.
Tender	30	July 30..	30·50	6 20	do Penetang and Muskoka Mills.
Maud	40	do 25..	18·26	5 73	do do Vicinity.
Hiawatha	300	Oct. 24..	162·62	14 48	do ferry at Sarnia.
	19,275		50,999·74	2,889 55	

THOS. HARBOTTLE,
Hull Inspector.

STEAM Vessels not Inspected for the Year ended 31st December, 1889.

WEST ONTARIO DIVISION.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	Dues and Fees.	Remarks. Why not Inspected and Class of Vessel.
Sovereign	684·08	425 55	.....	Boat has not been running.

THOS. HARBOTTLE,
Hull Inspector.

Steam Vessels Inspected for the Year ended 31st December, 1889.

EAST ONTARIO DIVISION.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
Passenger Steamers.		1890.		$ cts.	
Pierepont	415	April 23	251·98	18 08	Paddle wheel.
Hero	425	do 24	342·12	21 68	do do
Maud	390	do 10	292·81	19 72	do do
Armenia	275	do 12	109·99	12 40	Screw do
Deseronto	85	do 12	67·91	7 72	do do
Resolute	25	do 12	371·86	22 88	Twin screw wheel.
Reliance	25	do 13	239·14	17 56	do do
Quinté	550	do 13	439·90	25 60	Paddle wheel.
Kathleen	200	do 17	385·78	23 44	Screw do
Rideau Belle	57	do 17	130·59	13 24	do do
Norseman	450	do 20	782·71	39 32	Paddle do
Reindeer	140	do 24	58·29	7 32	Screw do
Varuna	188	do 24	134·04	13 36	do do
Empress of India	680	do 25	579·05	31 16	Paddle do
Princess Louise	240	do 29	114·88	12 60	Screw do
Alexandria	580	May 13	863·15	42 52	Paddle do
Mary Ethel	50	do 15	98·61	8 96	Centre wheel, ferry.
Annie Gilbert	35	do 15	19 00	5 80	Screw wheel.
Nellie Cuthbert	100	do 16	59·03	7 36	do do
Khartoum	39	do 21	62·71	7 52	do do
Ella Ross	300	do 22	324·88	21 00	Paddle do
John Haggart	200	do 29	112·21	12 48	Screw do
Rothesay	600	June 3	839·24	41 56	Paddle do
Island Queen	300	do 4	98·09	8 96	Screw do
Catherine	32	do 5	14·76	5 60	do do
Transit	450	do 7	140·81	13 60	Twin screw wheel.
City of Belleville	250	do 8	101·17	12 04	Screw wheel.
Caribou	250	do 12	160·65	14 44	do do
Antelope	40	do 17	19·59	5 80	do do
St. Julian	35	do 7	19·92	5 80	do do

STEAM Vessels Inspected for the Year, &c.—East Ontario Division—*Con.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
Passenger Steamers—Con.		1890.		$ cts.	
Vega	20	June 28.	6·96	5 28	Screw wheel.
Daisy	60	July 9.	7·20	5 28	do do
Pearl	16	do 9.	7·70	5 32	do do
Beaver	75	do 11.	18·00	5 72	do do
Golden Eye	171	do 12.	287·60	19 52	Paddle do
Mary Louise	40	do 13.	10·00	5 40	Screw do
Dominion	100	do 15	45·88	6 96	Paddle do
Alice Ethel	175	do 16.	71·75	7 88	do do
Zetta Bruce	25	do 19	8·75	5 36	Screw do
Dawn	35	do 19.	20·20	5 80	do do
Esturion	325	do 22.	118·36	12 72	Paddle do
Beaubocage	150	do 22.	129·00	13 16	do do
Maple Leaf	70	do 24.	26·08	6 04	Screw do
Cruiser	75	do 25.	39·10	6 56	do do
Arene	12	do 26.	2·70	5 12	do do
Mary Ellen	117	do 26.	44·50	6 80	do do
Fearless	50	Aug. 27.	46·38	6 84	do do
Princess Louise	100	do 27.	26·36	6 04	do do
Ivy	35	do 29.	7·43	5 28	do do
Grenada	175	do 28.	57·00	7 28	do do
Alert	40	do 30.	49·83	7 00	do
Alaska	100	do 30.	48·74	6 96	do do
Tropic	25	Sept. 5.	8·86	5 36	do do
Prince Edward	.....	do 13.	18·22	5 72	Centre wheel, ferry.
Alberta	.....	do 13.	68·00	7 72	do do
Outlet Queen	50	do 20.	18·45	6 44	Screw wheel.
			1,193·05	187 56	

Steam Vessels Inspected for the Year ended 31st December, 1889.

EAST ONTARIO DIVISION.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
Freight Steamers.		1889.		$ cts.	
Scotia		Dec. 30	628·51	30 16	Screw wheel.
		1890.			
Niagara		April 9	468·00	23 72	do
D. R. Van Allen		do 9	317·95	17 72	do
D. D. Calvin		do 10	749·53	35 00	do
Nile		do 13	96·30	8 84	do
Armenia		do 16	642·67	30 72	do
Water Lily		May 1	95·77	8 84	do
Glengarry	10	do 2	494·83	27 80	do
Olive		do 9	107·04	9 28	do
Saxon		do 14	180·90	12 24	do
Freemason		do 14	104·82	9 20	do
Robert Anglin		do 27	97·18	8 88	do
Yacht Steamers.					
Dream		June 4	12·16	5 48	Screw wheel.
Pomona		do 5	4·88	5 20	do
Echo		do 6	6·06	5 24	do
Clipper		do 6	3·75	5 16	do
Carlton		do 6	8·11	5 32	do
Dorothy		do 10	10·09	5 40	do
Spray		do 14	4·19	5 16	do
Naiad		July 2	17·55	5 72	do
Ina		Not issued.	10·78	5 44	do
Siesta		July 16	14·96	5 60	do
Daisy		Aug. 12	4·89	5 20	do
Cosette		May 20	21·59	5 88	do
Geraldine		July 1	17·90	5 72	do
Where Now		Not issued.	47·78	6 92	do
Ontario Belle		Sept. 7	7·00	5 28	do
Nellie		do 19	6·82	5 28	do

STEAM Vessels Inspected for the Year, &c.—East Ontario Division—*Con.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
Tug Steamers.		1890.		$ cts.	
H. F. Bronson		April 8	137·12	10 48	Twin screws.
James A. Walker		do 8	183·58	12 36	Screw wheel.
Active		do 9	345·88	18 84	do
Rescue		do 13	52·29	7 08	do
John A. Macdonald		do 16	273·00	15 92	Paddle wheel.
McArthur		do 18	190·46	12 60	Twin screws.
Traveller		do 19	207·52	13 32	Paddle wheel.
Ranger		do 26	13·83	5 56	Screw wheel.
David G. Thomson		do 27	185·05	12 40	Twin screws.
Hiram A. Calvin		do 29	300·00	17 00	Paddle wheel.
Wm. Johnston		do 29	80·65	8 24	Screw wheel.
Jessie Hall		May 2	56·54	7 28	do
Glide		do 3	77·90	8 12	do
Thistle		do 3	36·02	6 44	do
Lily		do 4	16·01	5 64	do
Albert Wright		do 6	29·00	6 16	do
D. P. Dey		do 13	11·26	5 44	do
Water Lily		do 17	4·00	5 16	do
Nora		do 18	28 13	6 12	do
Edmond		do 31	39·10	6 56	do
Peerless		do 28	25·61	6 04	do
Gilbert		June 10	40·83	6 64	do
Myra		do 11	73·21	7 92	do
Anna		do 11	7·89	5 32	do
Eleanor		1889. Dec. 30	24·97	6 00	do
Sunbeam		1890. July 10	13·43	5 52	do
Mary Ellen		do 13	81·20	8 24	Paddle wheel.
Stranger		do 15	28·00	6 12	Screw wheel.
Myrtle		do 17	27·46	6 08	Paddle wheel.
Eva		do 18	33·60	6 36	Screw wheel.
Waterwitch		do 18	9·20	5 36	do
Express		do 20	3·90	5 16	do

STEAM Vessels Inspected for the year, &c.—East Ontario Division—*Con.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
Bella Fair		July 23	6·60	5 28	Screw wheel.
Undine		do 25	4·90	5 20	do
Emma Munson		May 18	32·63	6 32	do
Chieftain		April 20	434·68	22 40	Paddle wheel.
Sarah Daly		Aug. 28	24·61	6 00	Screw wheel.
Enterprise		1889. Dec. 30	60·38	7 40	Paddle wheel.
May Flower		1890. Sept. 6	4·20	5 16	Screw wheel.
Eliza Bonar		May 16	25.68	6 04	do
			640·38	80 68	
			2,589·94	248 60	
			4,182·01	310 40	
Brought forward			1,193·05	187 56	
			7,234·87	499 52	
Total			15,840·25	1,326 76	

Steam Vessels not Inspected for the Year ended 31st December, 1889.

EAST ONTARIO DIVISION.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	Dues and Fees.	Remarks. — Why not Inspected and Class of Vessel.
			$ cts.	
Utica	52·00	39·00		Not employed ; screw wheel, passenger.
Conqueror	198·73	15·25		do paddle, tug.
Marquis of Lorne	20·19	10·59		do screw, tug.
Belle Amelia	3·80	2·60		do screw wheel, passenger.
Pioneer	28·07	19·09		do do
Anglo Saxon	69·01	43·41		do paddle, tug.
Ripple	16·05	10·24		Engine taken out : screw, tug.
	387·85	140·18		

Total number of vessels, 131.
do gross tonnage of all the vessels, 16,228·10.
do number of vessels inspected, 124.
do gross tonnage of vessels inspected, 15,840·25.
do amount of dues and fees collected on account of inspection, $1,326.76.
do amount of engineers fees collected, $24.

EDWARD ADAMS,
Steamboat Inspector.

Steam Vessels Inspected for the Year ended 31st December, 1889.

EAST ONTARIO DIVISION.

Name of Vessel.	Number of Passengers Allowed	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks
		1890.		$ cts.	
D. R. Vanallen		April 9	317·95	17 72	Screw, freight
		1889.			
Scotia		Dec. 30	628·51	30 16	do
		1890.			
Niagara		April 9	468·00	23 72	do
D. D Calvin		do 10	749·53	35 00	do
Armenia	271	do 12	109·99	12 40	Screw, passenger.
Deseronto	85	do 12	67·91	7 72	do
Resolute	25	do 12	371·86	22 88	Twin screw, passenger.
Reliance	25	do 13	239·14	17 56	do do
Quinte	550	do 13	439·90	25 60	Paddle, passenger.
Armenia		do 16	642·67	30 72	Screw, freight.
Kathleen	200	do 17	385·78	23 44	Screw, passenger.
Rideau Belle	57	do 17	130·59	13 24	do
Norseman	450	do 20	782·71	39 32	Paddle, passenger.
Pierrepont	415	do 23	251·98	18 08	do
Hero	425	do 24	342·12	21 68	do
Reindeer	140	do 24	58·29	7 32	Screw, passenger.
Varuna	188	do 24	134·04	13 36	do
Empress of India	680	do 25	579·05	31 16	Paddle, passenger.
Princess Louise	240	do 29	114·88	12 60	Screw, passenger.
Maud	390	do 10	292·81	19 72	Paddle, passenger.
Glengarry	10	May 2	494·83	27 80	Screw, passenger and freight.
Alexandria	580	do 13	863·15	42 52	Paddle do
Saxon		do 14	180·90	12 24	Screw, freight.
Mary Ethel	50	do 15	98·61	8 96	Centre wheel, ferry.
Annie Gilbert	35	do 15	19·00	5 80	Screw, passenger.
Nellie Cuthbert	90	do 16	59·03	7 36	do
Khartoum	39	do 21	62·71	7 52	do
Ella Ross	300	do 22	324·88	21 00	Paddle, passenger.
John Haggart	200	do 29	112·21	12 48	Screw, passenger.
Rothesay	600	June 3	839·24	41 56	Paddle, passenger.
Island Queen	300	do 4	98·09	8 96	Screw, passenger.

STEAM Vessels Inspected for the Year, &c.—East Ontario Division—*Con.*

Name of Vessel.	Number of Passengers Allowed	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
Catherine	32	June 5	14·76	5 60	Screw, passedger.
Echo	28	None issued.	6·06	5 24	do
Transit	450	June 7	140·81	13 60	Twin screw, passenger
City of Belleville	250	do 8	101·17	12 04	Screw, passenger.
Myles	.....	May 4	1,210·63	53 44	Screw, freight.
Antelope	40	June 17	19·59	5 80	Screw, passenger.
St. Julian	35	do 7	19·92	5 80	do
Cariboo	250	do 12	160·65	14 44	do
Vega	20	do 28	6·96	5 28	do
Daisy	60	July 9	7·20	5 28	do
Pearl	16	do 9	7·70	5 32	do
Otonabee	200	do 9	49·00	1 96	Scow, passenger.
Beaver	75	do 11	18·00	5 72	Screw, passenger
Golden Eye	171	do 12	287·60	19 52	Paddle, passenger.
Ark	192	do 11	48·20	1 96	Scow, passenger.
City of Peterboro'	385	do 12	49·50	1 98	do
Alice Ethel	175	do 16	71·75	7 88	Paddle, passenger.
Lindsay	575	do 18	75·00	3 00	Scow, passenger.
Luella	90	do 13	20·00	0 80	do
Mary Louise	40	do 13	10·00	5 40	Screw, passenger.
Dominion	100	do 15	45·88	6 96	Paddle, passenger.
Paragon	400	do 15	71·00	2 84	Scow, passenger.
Zebba Bruce	25	do 19	8·75	5 36	Screw, passenger.
Consort	110	do 20	16·20	0 64	Scow, passenger.
Esturion	325	do 22	118·36	12 72	Paddle, passenger.
Beaubocage	150	do 22	129·00	13 16	do
Poloma	750	do 23	121·50	4 88	Scow, passenger.
Maple Leaf	70	do 24	26·08	6 04	Screw, passenger.
Cruiser	75	do 25	39·10	6 56	do
Irene	12	do 26	2·70	5 12	do
Mary Ellen	117	do 26	44·50	6 80	do
Dawn	35	July 19	20·20	5 80	do

STEAM Vessels Inspected for the Year, &c.—East Ontario Division—*Con.*

Name of Vessel.	Number of Passengers Allowed	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
	1890.			$ cts.	
Fearless	50	Aug. 27	46·38	6 84	Screw wheel.
Princess Louise	100	do 27	26·36	6 04	do
Grenada	175	do 28	57·00	7 28	do
Ivy	35	do 29	7·43	5 28	do
Alert	40	do 30	49·83	7 00	do
Alaska	100	do 30	48·74	6 96	do
Tropic	25	Sept. 5	8·86	5 36	do
Prince Edward		do 13	18·22	5 72	Centre wheel, ferry.
Alberta		do 13	68·00	7 72	do
Outlet Queen	50	do 20	18·45	6 44	Screw, passenger.
Billow	175	None issued.	40 00	Not paid.	Scow, passenger.
Total			13,617·40	941 18	

Steam Vessels not Inspected for the Year ended 31st December, 1889.

EAST ONTARIO DIVISION.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	Dues and Fees.	Remarks. Why not Inspected and Class of Vessel.
			$ cts.	
Utica	52·00	39·00		Not employed; screw, passenger.
Belle Amelia	3·80	2·60		do do
Pioneer	28·07	19·09		do do
Olive	107·04	86·85		Employed; freight, screw, passenger.
Geraldine	17·90	14·39		do private yacht, screw, pass.
Eva	33·60	11·60		do tug, screw, passenger.
Total	242·41	173·53		

THOMAS DONNELLY,
Hull Inspector.

Steam Vessels Inspected for the Year ended 31st December, 1889.

MONTREAL DIVISION.

Name of Vessel.	Number of Passengers allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.		Remarks.
		1890.		$ cts.	$	
Walter B	30	April 18..	28	1 12	5	Screw, passenger.
Pembroke		do 18..	162	6 48	5	Side-wheel, tug.
Dauntless		do 18..	342	13 68	5	do do
Ottawa	200	do 18..	116	4 64	8	do passenger.
H. F. Bronson		do 18..	72	2 88	5	Screw, tug.
Hiram Robinson		do 18..	61	2 44	5	do do
J. B. Pattie		do 18..	272	10 88	5	Side-wheel do
Rambler		do 18..	8	0 32	5	Screw do
J. L. Murphy		do 19..	173	6 92	5	do do
A. H. Baldwin		do 19..	177	7 08	5	do do
Nosbousing		do 20..	25	1 00	5	do do
Booth		do 21..	234	9 36	5	Side-wheel do
J. R. Booth		do 22..	132	5 28	5	Screw do
Agnes McMahon		do 22..	82	3 28	5	do do
Elgin		do 22..	108	4 32	5	do do
G. H. Notter		do 22..	13	0 52	5	do do
Thousand Island Rambler	75	do 23..	20	0 80	5	do passenger.
Allan Gilmour		do 23..	61	2 44	5	do tug.
John Heney		do ..	19	0 76	5	do do
Harry Bate		do 23..	254	10 16	5	do freight.
Col. By		do 23..	9	0 36	5	do tug.
Empress	800	do 23..	677	27 08	8	Side-wheel, passenger.
Resolute		do 23..	30	1 20	5	Screw, tug.
Hiram Easton		do 23..	34	1 36	5	do do
Express		do 24..	100	4 00	8	Side-wheel, passenger.
Ada		do 24..	28	1 12	5	Screw, tug.
E. B. Eddy		do 26..	78	3 12	5	do do
Dolphin		do 26..	70	2 80	5	do do
Pearle	25	do 26..	5	0 20	5	do passenge
G. A. Harris		do 26 .	87	3 48	5	do tug.
Arctic		May 3..	65	2 60	5	do do

STEAM Vessels Inspected for the Year, &c.—Montreal Division—*Con.*

Name of Vessel.	Number of Passengers allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.		Remarks.
		1890.		$ cts.	$	
Florence		May 7..	62	2 48	5	Screw, tug.
Windermere (yacht)		do 9..	35	1 40	5	do yacht.
Prince of Wales	501	do 9..	610	24 40	8	Side-wheel, passenger.
Georgiana		do 9..	53	2 12	5	Screw, tug.
Cultivateur	100	do 11..	152	6 08	8	Centre-wheel, passenger.
W. C. Francis		do 11..	37	1 48	5	Screw, tug.
Grain Elevator No. 12		do 11..	183	7 32	5	do
do 7		do 11..	170	6 80	5	do
do 10		do 11..	173	6 92	5	do
Longueuil	889	do 13..	365	14 60	8	Side-wheel, passenger.
Grain Elevator No. 11		do 13..	169	6 76	5	Screw.
do 9		do 13..	172	6 88	5	do
do 1		do 13..	83	3 32	5	do
Maud	350	do 14.	269	10 76	8	Side-wheel, passenger.
Dagmar	400	do 14..	405	16 20	8	do do
Princess	443	do 14..	579	23 16	8	do do
Grain Elevator No. 13		do 14..	178	7 12	5	Screw.
S. S. Polino	30	do 15..	807	32 28	8	do freight and passenger.
Grain Elevator No. 10		do 15..	181	7 24	5	do
do 1		do 15..	165	6 60	5	do
T. H. Nasmith		do 17..	49	1 96	5	do tug.
Maggie R. King		do 17..	27	1 08	5	do do
Filgate	500	do 18..	263	10 52	8	Side-wheel, passenger.
Nama (yacht)		do 20..	30	1 20	5	Screw, yacht.
Grain Elevator No. 6		do 20..	170	6 80	5	do
E. G. Laverdure	100	do 22..	54	2 16	5	do passenger.
Bertie Jones	22	do 22..	2	0 08	5	do do
Islenay		do 22..	7	0 28	5	do
Minnie Bell		do 22..	22	0 88	5	do tug.
Vesta (yacht)		do 23..	14	0 56	5	Screw, yacht.
C. Anderson	100	do 25..	105	4 20	8	do passenger.
Chaffey	50	do 25..	42	1 68	5	do do

STEAM Vessels Inspected for the Year, &c.—Montreal Division—*Con.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.		Remarks.
		1890.		$ cts.	$	
Garnet	240	May 25..	98	3 92	5	Side-wheel, passenger.
Transfer	400	do 25..	619	24 76	8	do do
Cultivateur	700	do 27..	362	14 48	8	do do
SS. Coban	50	do 30..	1,063	42 52	8	Screw, freight and passenger
Plover		June 6..	43	1 72	5	do tug.
Dahinda		do 8..	46	1 84	5	do yacht.
Dandy		do 10..	46	1 84	5	do tug.
Sorel Boy	40	do 17..	11	0 44	5	do passenger.
H. M. Mixer		do 17..	21	0 84	5	do tug.
Monitor		do 18..	333	13 32	5	Side-wheel, tug.
G. B. Pattie		do 18..	30	1 20	5	Screw, tug.
E. Davis	50	do 18..	37	1 48	5	do passenger.
Albert		do 18..	216	8 64	5	Side-wheel, tug.
Caster		do 18..	54	2 16	5	Screw, tug.
Janet Craig	50	do 20..	12	0 48	5	do passenger.
High Rock		do 20..	7	0 28	5	do tug.
Agnes	50	do 20..	29	1 16	5	do passenger.
Eva	25	do 20..	6	0 24	5	do do
Aid		do 21..	25	1 00	5	Centre-wheel, tug.
Rockland		do 21..	78	3 12	5	Screw do
Mouche a Feu	50	do 21..	20	0 80	5	Centre-wheel, passenger.
Bonito	30	do 21..	17	0 68	5	Screw do
Glide	100	do 22..	80	3 20	5	do do
John	50	do 22..	35	1 40	5	Centre-wheel do
Nellie Reid		do 25..	55	2 20	5	Screw, tug.
Powerful	300	July 3..	254	10 16	8	Side-wheel, passenger.
Mona		do 4..	25	1 00	5	Screw, tug.
Rigaud		do 5..	46	1 84	5	do do
Calumet		do 6..	40	1 60	5	do do
W. F. Logie		do 6..	17	0 68	5	do do
Mansfield		do 8..	121	4 84	8	do passenger.
River Bell		do 8..	7	0 28	5	do tug.

Steam Vessels Inspected for the Year, &c.—Montreal Division—*Con.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.		Remarks.
		1890.		$ cts.	$	
Kate		July 8..	23	0 92	5	Screw, tug.
Mountain Maid	250	do 11..	118	4 72	8	Side-wheel, passenger.
John A.		do 11..	19	0 76	5	Screw, tug.
Lady of the Lake	700	do 11..	607	24 28	8	Side-wheel, passenger.
Mayflower		do 12..	18	0 72	5	Screw do
Humber		do 17..	13	0 52	5	do tug.
Gertie		do 18..	17	0 68	5	do do
Tim Doyle		do 19..	20	0 80	5	do do
Shickluna		do 23..	66	2 64	5	do do
Alexandria (yacht)		do 24..	53	2 12	5	do yacht.
Silver Spray		do 27..	130	5 20	5	do tug.
SS. Bonavista	50	do 27..	1,306	52 24	8	do freight and passenger
Egerton	160	do 29..	112	4 48	8	Side-wheel, passenger.
J. K. Ward		do 30..	23	0 92	5	Screw, tug.
Antelope		do 31..	82	3 28	5	do do
Welshman		do 31..	143	5 72	5	do freight.
Hall	300	do 31..	247	9 88	8	do freight and passenger.
Owens		Aug. 5..	156	6 24	5	Side-wheel, tug.
Vermont		do 5..	206	8 24	5	do do
John Fraser	200	do 6..	118	4 72	8	do passenger.
Clyde	60	do 8..	29	1 16	5	Screw do
Argo		do 8.	154	6 16	5	Side-wheel, tug.
Meteor	150	do 8..	132	5 28	8	Screw, passenger.
Dora	50	do 8..	48	1 92	5	do do
Toneata	25	do 9..	14	0 56	5	do do
Lottie	25	do 9..	10	0 40	5	do do
Emerillion	25	do 9..	15	0 60	5	do do
Mattawan	60	do 9..	22	0 88	5	do do
H. Bonnefant	25	do 14..	22	0 88	5	Centre-wheel, passenger.
Sovereign	500	do 15..	637	25 48	8	Side-wheel do
James	60	do 20..	127	5 08	8	do do
Monarque		do 30..	136	5 44	5	do tug.

STEAM Vessels Inspected for the Year, &c.—Montreal Division—*Con.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.		Remarks.
		1890.		$ cts.	$	
Geo. H. Millen		Sept. 16..	11	0 44	5	Screw, tug.
Wm. Paul		do 18..	7	0 28	5	do do
Asilda		do 19..	24	0 96	5	do do
St. Anne		do 19..	25	1 00	5	do do
Charlotte		Oct. 9..	59	4 72	5	do do
Agusta		do 21..	57	4 56	5	do do
Gatineau		do 21..	175	7 00	5	Side-wheel do
Reliance		Nov. 1..	72	5 76	5	do passenger
Sandy		do 2..	29	2 32	5	Screw, tug.
Totals			18,310	741 08	758	

JOHN BURGESS,
Steamboat Inspector.

STEAM Vessels not Inspected for the Year ended 31st December, 1889.

MONTREAL DIVISION.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	Dues and Fees.	Remarks. — Why not Inspected and Class of Vessel.
			$ cts.	
Eadie May	9	5		Not applied for ; screw, passenger.
Star	366	200		Not employed ; side-wheel, passenger.
Percy	7	5		Not applied for ; screw, tug.
Belmont	133	84		Not employed ; side-wheel, passenger.
Aries	6	3		Not applied for ; screw, tug.
Grain Elevator No. 2	172	104		Not employed.
do No. 4	188	118		do
do No. 5	151	90		do
do No. 8	178	112		do
Chipmonk (yacht)	12	8		Not applied for.
	1,222	729		

JOHN BURGESS,
Steamboat Inspector.

Steam Vessels Inspected for the Year ended 31st December, 1889.

QUEBEC DIVISION.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1889.		$ cts.	
Miramichi	300	Nov. 25	727	37 08	Paddle, passenger, Montreal and Pictou, N.S.
Union	773	do 25	687	35 48	Paddle, passenger, Quebec and Chicoutimi.
Contest	150	do 25	231	17 24	do Mail tender, Rimouski.
Otter	123	do 25	219	16 76	Screw, coasting, Quebec and Netahsquan.
Etoile	591	do 25	560	30 40	Paddle, passenger, Quebec and St. Jean des Chaillons.
John Young	Tug	Close of navigation.	163	11 52	Paddle, tug, Montreal and Chambly.
St. Peter	do	do	45	6 80	Screw, tug, Montreal Harbour.
St. Louis	do	do	34	6 36	do do
Berthier	700	Nov. 25	1,101	52 04	Paddle, passenger, Montreal and St. Helen's Island.
McNaughton	Tug	Close of navigation.	137	10 48	Screw, tug, Montreal Harbour.
Laprairie	997	Nov. 25	523	28 92	Paddle, ferry, Montreal and Laprairie.
Chambly	600	do 25	647	33 88	do passenger, Montreal and Chambly.
Montreal	800	do 25	2,211	96 44	do do Quebec and Montreal.
Quebec	800	do 25	3,056	130 24	do do do
Rivière du Loup	150	do 25	173	14 92	do ferry, L'Assomption and Varennes.
Sorel	300	do 25	158	14 32	do do Sorel and St. Thomas.
Trois Rivières	1,000	do 25	1,710	76 40	do pass., Montreal and Three Rivers.
Mouche à feu	300	do 25	214	16 56	do ferry, Sorel and Berthier.
South	450	do 25	349	21 96	do do Quebec and Lévis.
North	450	do 25	289	19 56	do do do
St. Croix	541	do 25	445	25 80	do passenger, Quebec and Ste. Croix.
Olivia Gordon	Tug	Close of navigation.	36	6 44	Screw, tug, Quebec Harbour.
Brothers	526	Nov. 25	262	18 48	Paddle, passenger, Quebec and St. Ann.
St. Louis	529	do 25	428	25 12	do Quebec and St. Jean des Chaillons.
Montmagny	450	do 25	351	22 04	do Quebec and Berthier en bas.
Admiral	350	do 25	682	35 28	do Dalhousie and Gaspé.
Lake	Tug	Close of navigation.	145	10 80	Screw, tug, Montreal and Gulf.
Passport	400	Nov. 25	1,034	49 36	Paddle, passenger, Montreal and Toronto.
Algerian	400	do 25	914	44 56	do do
Spartan	400	do 25	1,168	54 72	do do
Corinthian	400	do 25	1,062	50 48	do do

STEAM Vessels Inspected for the Year, &c.—Quebec Division.—*Con.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1889.		$ cts.	
Levis	350	Nov. 25	156	14 24	Screw, ferry, Quebec and St. Romuald.
Orleans	475	do 25	181	15 24	do Quebec and Island of Orleans.
Montmagny	Tug	Close of navigation.	18	5 72	Screw, tug, Quebec Harbour.
Champion	do	do	185	12 40	do do Montreal and Gulf.
Canada	1,200	Nov. 25	2,009	88 36	Paddle, passenger, Montreal and Quebec.
Rival	Tug	Close of navigation.	125	10 00	do tug, Quebec and Lake Ontario.
Pilgrim	455	Nov. 25	262	18 48	do passenger, Quebec and St. Nicholas.
Victory	Tug	Close of navigation.	42	6 68	Screw, tug, Quebec Harbour.
Isabel	do	do	51	7 04	do river tug, Quebec.
Marie Louise	do	do	99	8 96	Paddle, tug, Bessimists River.
St. Lawrence	700	Oct. 1	869	42 76	do passenger, Quebec and Chicoutimi
Albani	Pleasure yacht.	Close of navigation.	58	7 32	Screw, pleasure yacht, Brockville.
Johanna B.	Tug	Sept. 1	17	5 68	do tug, Quebec Harbour.
Flora	do	Close of navigation.	50	7 00	do do
Rhoda	do	do 1890.	182	12 28	Paddle, tug, Montreal and Gulf.
Acadian	Freight	Juue 1	931	42 24	Screw, freight, Montreal and Pictou, N.S
Almanda	Tug	Close of navigation.	11	5 44	do tug, Quebec Harbor.
Margaret	do	do	64	7 56	do do
Aurelia	do	do	32	6 28	do do
Lady Belleau		do	81	8 24	do wrecking schooner, Gulf.
Pioneer	Tug	do	176	12 04	Paddle, tug, Lake St. John.
Rodolphe	do	do	116	9 64	Screw, tug, Quebec Harbour.
Lucie	do	do 1889.	25	6 00	Stern wheel tug, Nicolet River.
Canadien	60	Nov. 25	26	6 04	Screw, passenger and tug, Sorel River.
Dan	80	do	51	7 04	do Lachine and Beauharnois.
Vulcan	40	do	22	5 88	do ferry, Dalhousie and Mabousaka.
Terrebonne	450	do	601	32 04	Paddle, passenger, Montreal and Sorel.
Vega		do 1890.	132	13 28	Screw, passenger, Gulf and River.
Cacouna	Freight	Aug. 17	1,451	66 04	Screw, freight, Montreal and foreign ports
St. Roch	Tug	Close of navigation.	18	5 72	do tug, Quebec Harbour.
Ed. Arpin	25	Nov. 25	5	5 20	Screw, pleasure yacht, Sorel.
Jacques Cartier	400	do 25	143	13 72	Paddle, passenger, Quebec and St. Ann.

STEAM Vessels Inspected for the Year, &c.—Quebec Division.—*Con.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1889.		$ cts.	
Com. Holiwell..	Tug.....	Close of navigation.	9	5 36	Screw, tug, Quebec Harbour.
Fairy.....	do	do ..	16	5 64	do do
Diver	do	do ..	86	8 44	Screw, wrecking steamer, Gulf.
Bessemist.....	do	do ..	50	7 00	Paddle, tug, at Betsiamist, not running this season.
Isle aux Noix...	do	do ..	20	5 80	Screw, tug, Lake Megantic.
Albion	do	do ..	7	5 28	do do
Randolph.	do	do ..	16	5 64	do Quebec Harbour.
William	do	do ..	276	16 04	Paddle, tug, Montreal and Bic.
Beaver	do	do ..	273	15 92	do Montreal and Gulf.
May Flower....	do	do ..	13	5 52	Screw, tug, Quebec Harbour.
Lizzie	Pleasure yacht.	do ..	Not registered	5 00	Pleasure screw yacht, Sorel.
H. C. Curtis....	Tug.....	do ..	44	6 76	Screw, tug, Quebec Harbour.
Two Brothers...	do	do ..	23	5 92	do do
Boston	do	do ..	321	17 84	Paddle, tug, Montreal and Quebec.
Canada	do	do ..	234	14 36	do do
Dauntless.	do	do ..	81	8 24	Screw, tug, Montreal and Gulf.
Victor	do	do ..	35	6 40	do Quebec Harbour.
Ida.....	do	do ..	15	5 60	do do
C. W. Jones...	do	do ..	38	6 52	do do
Maggie Bell	do	do ..	372	19 88	Paddle, tug, Montreal and Quebec.
		1890			
Greetlands.....	80	June 1....	1,091	51 64	Screw, pass., Montreal and St. John, Nfld.
Glacial..	155	do 1....	109	12 36	Screw, ferry, winter, Three Rivers and Ste. Angèle.
		1889			
Bourgeois.... ..	200	Nov. 25....	170	14 80	Paddle, ferry, Three Rivers and St. Angèle.
Como.....	100	do 25....	75	8 00	do do Nicolet.
Florence.....	Tug.....	Close of nav. igation.	133	10 32	Screw, tug, Montreal and Gulf.
Thor.....	do	do ..	322	17 88	Paddle, tug, Saguenay River.
Bell	do	do ..	51	7 04	Screw, tug do
Kinogomi.....	do	do ..	21	5 84	do do
Cookoo.....	do	do ..	6	5 24	do Chicoutimi Harbour.
Mersy.....	do	do ..	60	9 80	do Quebec Harbour.
Chicoutimi	do	do ..	.....	5 00	Screw, pleasure yacht, Chicoutimi.
Robert Stoker..	do	do ..	14	6 12	Screw, tug, Three Rivers Harbour.

STEAM Vessels Inspected for the Year, &c.—Quebec Division.—*Con.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1889.		$ cts.	
J. R. Souter	Tug	Close of navigation.	11	5 88	Screw, tug, Quebec Harbour.
Anglesea	do	do	153	17 24	Paddle, tug, Montreal and Bic.
Maud	do	do	54	9 32	do Three Rivers Harbour.
Swallow	do	do	9	5 72	Screw, tug, Quebec Harbour.
Florence	do	do	133	15 64	Screw, wrecking schooner, Gulf.
Batiscan	do	do	40	6 60	Paddle, tug, Batiscan and Quebec.
W. Ross	do	do	14	6 12	Screw, tug, Three Rivers Harbour.
Forest	do	do	26	7 08	do Chicoutimi Harbour.
Hubert Larkin	do	do	49	8 92	do Quebec Harbour.
Stormy Petrel	do	do	11	5 88	do do
Hope	do	do	20	6 60	do do
Ida	do	do	247	17 88	Screw, passenger, Sorel and Montreal.
Hetisety	do	do	15	6 20	Screw, tug, Quebec Harbour.
Swan	do	do	5	5 40	Screw, pleasure yacht, Lake St. John.
Patrick Murphy	do	do	10	5 80	Screw, tug, Quebec Harbour.
St. George	do	do	13	6 04	do do
Thames	Freight	1890 June 1	1,683	75 32	Screw, freight, Montreal and St. John, Nfld.
Corsican	400	1889 Nov. 25	1,203	56 12	Paddle, pass., Lake Ontario and Montreal.
Hochelaga	400	do 25	419	24 76	do ferry, Montreal and Longueuil.
Bohemian	500	do 25	1,138	53 52	do passenger, Montreal and Cornwall
Frances	60	do 25	19	5 76	do ferry, Campbelltown and Cross Point.
Vesta	Tug	do 25	4	5 32	Screw, tug, Three Rivers Harbour.
Pilot	350	1890 do 1	426	25 04	Screw, winter ferry, Quebec and Lévis.
Queen	350	do 1	367	22 68	do do
Polaris	350	do 1	533	29 32	do do
City	Tug	1889 Close of navigation.	52	9 16	Paddle, tug, Sorel Harbour.
St. George	do	do	20	6 60	Screw, tug, Sorel Harbour.
Oak Bay	do	do	27	6 08	Side wheel, tug, Campbelltown, N.B.
Christianna	do	do	57	7 28	do do
Arthur	do	do	33	7 64	Harbour tug, Three Rivers.
Belle		Nov. 25			Screw, pleasure yacht, Lake St. John.
Ripple		do 25			do Lake Edward.

STEAM Vessels Inspected for the Year, &c.—Quebec Division—*Concluded.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1889.		$ cts.	
Emma		Nov. 25			Screw, pleasure yacht, Lake Edward.
Hunkey Dore		Close of navigation.	5		Screw, tug, Quebec Harbour.
Five Brothers		do	11		do do
Lena		do			do Lake Megantic.
St. Louis		do			Screw, pass., Piles and Latuque.
Perebonca		Nov. 25	144		Side wheel, passenger, Lake St. John.
Richelieu		do 25			Screw, passenger, Richelieu River.
St. Paul		Close of navigation.	45		Screw, tug, Public Works Department.
John Pratt		do	70		do do
St. James		do	91		do do
J. C. Brydges		do	39		do do
Délisle		do	45		do do
			39,172	2,337 12	

JOS. SAMSON.

Boiler and Machinery Inspector.

STEAM Vessels not Inspected for the Year ended 31st December, 1889.

QUEBEC DIVISION.

Name of Vessels.	Gross Tonnage.	Registered Tonnage.	Dues and Fees.	Remarks. — Why not Inspected and Class of Vessel.
Conqueror, No. 2	233	25	Not paid	Side-wheel ; tug.
Lady Dufferin	5	3	do	Screw ; Quebec harbour tug.
Relief	381	193	do	do wrecking tug.
Bienvenu	648	373	do	Side-wheel ; passenger.
Rocket	590	329	do	do tug.
Magnet	1,029	86	do	do passenger.
South Eastern	395	249	do	Twin-screw ; ferry ; transfer.
Latuque	50	31	do	Side-wheel ; tug.
Totals	3,331	1,789		

JOS. SAMSON,
Boiler and Machinery Inspector.

Steam Vessels Inspected for the Year ended 31st December, 1889.

QUEBEC AND MONTREAL DIVISION.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1889.		$ cts.	
Miramichi	300	Nov. 25	727	37 08	Paddle, passenger, Montreal and Pictou.
Quebec	800	do 25	3,056	130 24	do do do and Quebec.
Otter	123	do 25	219	16 76	Screw, coasting, Quebec and Netashquau.
Montreal	800	do 25	2,211	96 44	Paddle, passenger, Montreal and Quebec.
Etoile	591	do 25	560	30 40	do do Quebec and St. Jean des Chaillons.
Berthier	700	do 25	1,101	52 04	do do Montreal and St. Helen Island.
Trois Rivières	1,000	do 25	1,710	76 40	do do Montreal and Three Rivers.
Rivière du Loup	150	do 25	173	14 92	do ferry, l'Assomption and Varennes.
Sorel	300	do 25	158	14 32	do do Sorel and St. Thomas.
Mouche-à-feu	300	do 25	214	16 56	do do Sorel and Berthier.
Chambly	600	do 25	647	33 88	do do Montreal and Chambly.
Laprairie	997	do 25	523	28 92	do do Montreal and Laprairie.
Longueuil	889	do 25	365	22 60	do do Hochelaga and Longueuil.
Polino	60	do 25	807	40 28	Screw, passenger, Montreal and Pictou.
St. Croix	541	do 25	445	25 80	Paddle do Quebec and Ste. Croix.
Union	773	do 25	687	35 48	do do Quebec and Chicoutimi.
North	450	do 25	289	19 56	do ferry, Quebec and Lévis.
South	450	do 25	349	21 96	do do do
Brothers	526	do 25	262	18 48	do passenger, Quebec and St. Ann.
Montmagny	450	do 25	351	22 04	do do Quebec and Berthier, *en bas.*
Orleans	475	do 25	181	15 24	Screw, ferry, Quebec and Island of Orleans.
Lévis	350	do 25	156	14 24	do Quebec and St. Romuald.
St. Louis	529	do 25	428	25 12	Paddle, passenger, Quebec and St. Jean des Chaillons.
		1890.			
Acadian	Freight.	June 1	931	42 24	Screw, freight, Montreal and Pictou.
		1889.			
Pilgrim	455	Nov. 25	262	18 48	Paddle, passenger, Quebec & St. Nicholas.
Princess	443	do 25	579	31 16	do do Montreal and Carillon.
Dagmar	400	do 25	405	24 20	do do do do
Maud	350	do 25	269	18 76	do do do and Ottawa.
Garnet	242	do 25	98	8 92	do do do & Cornwall.
Filgate	500	do 25	263	18 52	do do do and Beauharnois.
Cultivateur	700	do 25	362	22 48	do do do and Isle St. Helen.

STEAM Vessels Inspected for the Year, &c.—Quebec and Montreal—*Con.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1889.		$ cts.	
Bohemian	500	Nov. 25	1,138	53 52	Paddle, passenger, Montreal & Cornwall.
Spartan	400	do 25	1,168	54 72	do do do and Toronto.
Algerian	400	do 25	914	44 56	do do do do
Corinthian	400	do 25	1,062	50 48	do do do do
Passport	400	do 25	1,034	49 36	do do do do
Contest	150	do 25	231	17 24	do do mail tender, Rimouski.
Admiral	350	do 25	682	35 28	do do Dalhousie and Gaspé.
Hochelaga	775	do 25	419	24 76	do ferry, Montreal and Longueuil.
Canada	1,200	do 25	2,009	88 36	do passenger, Montreal and Quebec.
Dan	80	do 25	51	7 04	Screw, pass., Lachine and Beauharnois.
Sorel Boy	40	do 25	11	5 44	do ferry, Montreal and Longueuil.
Vega	250	do 25	132	13 28	do pass., Gulf and River St. Lawrence.
Ed. Alpin	25	do 25	5	5 20	do pleasure yacht, Sorel.
Francis	60	do 25	19	5 76	Paddle, ferry, Campbelltown and Cross Point.
Vulcan	40	do 25	22	5 88	Screw, pass., Dalhousie and Magbouache.
Canadian	60	do 25	26	6 04	do Sorel River.
Terrebonne	450	do 25	601	32 04	Paddle, pass., Montreal and Sorel.
Powerfull	300	do 25	254	18 16	do ferry, Hochelaga and Boucherville.
St. Lawrence	700	Oct. 1	869	42 76	do pass., Quebec and Chicoutimi.
Egerton	160	do 1	112	12 48	do do Pictou and Prince Edward Island.
Prince of Wales	501	Nov. 25	610	32 40	do do Montreal and Carillon.
Ottawa	200	do 25	116	12 64	do do Pembroke and Joachims.
Bonito	30	do 25	17	5 68	Screw, ferry, Calumet and L'Orignal.
Glide	100	do 25	80	8 20	do do and Hawkesbury.
Empress	800	do 25	677	35 08	Paddle, pass., Ottawa and Grenville.
John	50	do 25	35	6 40	Centre-wheel, ferry, Carillon and Port Fortescue.
E. G. Laverdure	100	do 25	54	7 16	Screw, pass., Ottawa and Rideau River.
Agnes	50	do 25	29	6 16	do Buckingham & Grand Rapids
Eva	25	do 25	6	5 24	do do do
Walter B	30	do 25	28	6 12	Screw, ferry, Pembroke and Allumette Island.
1000 Island Rambler.	75	do 25	20	5 80	Screw, ferry, Ottawa and Hull.
		1890.			
Can. Atlantic Trans.	400	June 1	619	32 76	Side-wheel, trans., Valleyfield and Coteau.

STEAM Vessels Inspected for the Year, &c.—Quebec and Montreal—*Con.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1889.		$ cts.	
Corsican	400	Nov. 25	1,203	56 12	Paddle, pass., Montreal and Lake Ontario.
C. Anderson	100	do 25	105	12 20	Screw, ferry, Valleyfield and Coteau.
Janet Craig	50	do 25	12	5 48	do Sand Point and Bristol.
Mouche à Feu	50	do 25	20	5 80	Centre-wheel, ferry, Thurso and Clarence.
Birdie Jones	22	do 25	2	5 08	Screw, pleasure yacht, Ottawa.
Ed. Davis	50	do 25	37	6 48	do ferry, at Quaillon.
James	60	do 25	127	13 08	Paddle, ferry, Lachine and Caughnawaga.
Chaffie	50	do 25	42	6 68	Screw ferry, Valleyfield and Lancaster.
		1890.			
Cobau	40	June 1	1,063	50 52	do passenger and freight, Montreal and Gulf Ports.
Bonavista	50	do 1	1,306	60 24	do passenger and freight, Montreal and Gulf Ports.
		1889.			
Pearl	25	Nov. 25	5	5 20	do pleasure yacht, Ottawa.
Jacques Cartier	400	do 25	143	13 72	Paddle, passenger, Quebec and St. Anne.
Argo	Freight.	do 25	154	11 16	do freight, Lake Témiscamingue.
Dora	50	do 25	48	6 92	Screw, passenger do
Meteor	150	do 25	132	13 28	do do
LeCultivateur	100	do 25	152	14 08	Centre-wheel, ferry, Verdun and Coté St. Catherine.
Bonenfant	25	do 25	22	5 88	do Charlemagne and Bout de l'Isle.
John Fraser	200	do 25	118	12 72	Screw, passenger, Lake Nipissing.
Emerillon	25	do 25	15	5 60	do Lake Témiscamingue.
Lotta	25	do 25	10	5 40	do do
Mattawan	60	do 25	22	5 88	do do
Hall	300	do 25	247	17 88	do and freight, Montreal Ottawa.
		1890.			
Glacial	155	June 1	109	12 36	Screw, winter ferry, Three Rivers and Ste. Angèle.
		1889.			
Bourgeois	200	Nov. 25	170	14 80	Paddle, winter ferry, Three Rivers and Ste. Angèle.
Como	100	do 25	75	8 00	Paddle, winter ferry, Three Rivers and Nicolet.
Clyde	60	do 25	29	6 16	Screw, passenger, Lake Témiscamingue.
		1890.			
Cacouna	Freight.	Aug. 17	1,451	66 04	do freight, Montreal and foreign ports.
		1889.			
Lady of the Lake	700	Nov. 25	607	32 28	Side-wheel, pass., Newport and Magog.
Mountain Maid	250	do 25	118	12 72	do do
Toneata	25	do 25	14	5 56	Screw, passenger, Lake Témiscamingue.
		1890.			
Greetlands	80	June 1	1,091	51 64	do pass. and freight, Montreal and St. John, Nfld.
		1889.			
Sovereign	500	Nov. 25	637	33 48	Paddle, passenger, Montreal and Carillon.

STEAM Vessels Inspected for the Year, &c.—Quebec and Montreal—*Con.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
				$ cts.	
Ida	100	Nov. 25....	247	17 88	Screw, passenger and freight, Montreal and Sorel.
Reliance	40	do 25.... 1890.	72	10 76	Paddle, pass., Montreal and Batiscan.
Thames	Freight.	June 1.... 1889.	1,683	75 32	Screw, freight, Montreal and St. John Nfld.
Peribonca	289	Nov. 25.... 1890.			Paddle, passenger, St. John.
Polaris	350	Nov. 1...	533	29 32	Screw, winter ferry, Quebec and Lévis.
Queen	350	do 1....	367	22 68	do do
Pilot	350	do 1.... 1889.	426	25 04	do do
Swan		Nov. 25....	5	5 40	Pleasure yacht, Lake Edward.
Ripple		do 25....			do do
Emma		do 25....			do do
Belle		do 25 ...			do Lake St. John.
Mayflower	100	do 25....	18	5 72	do do Massawippi.
Albion	20	do 25....	7	5 28	do do Megantic.
St. Louis	20	do 25 ...			Screw, passenger, Piles and Latuque.
			44,482	2,509 36	

PIERRE D. BRUNELLE,
Hull Inspector.

Steam Vessels not Inspected for the Year ended 31st December, 1889.

QUEBEC AND MONTREAL DIVISION.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	Dues and Fees.	Remarks. Why not Inspected and Class of Vessel.
Rocket	590·00	329·00	Not paid ...	Paddle; passenger, Montreal.
Adirondack	12·27	8 34	do ...	Screw; passenger, the owner evaded my inspection and was reported.
Bienvenu	647·41	373·14	do ...	Paddle; passenger; Quebec and Ste. Anne; not employed.
Belmont	133·00	84·00	do ...	Paddle; passenger; not employed.
South Eastern	395·00	127·00	do ...	Screw; ferry transfer do
Eddy May	5·00	3·00	do ...	do passenger do
Magnet	1,029·00	586·00	do ...	Paddle; passenger do
Ida	6·00	4·00	do ...	Screw; pleasure yacht do
Express	110·00	62·00	do ...	Paddle; ferry.
	2,918·18	1,576·53		

PIERRE D. BRUNELLE,
Hull Inspector.

Steam Vessels Inspected for the Year ended 7th December, 1889.

MARITIME PROVINCES DIVISION.

Name of Vessel.	Number of Passengers allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1889.		$ cts.	
Carrie		Aug. 8	14·83	Paid at first inspection, Aug. 6, '88	Tug and fish-boat, screw.
		1890.			
Harlaw	75	Feb. 16	451·36	26 04	Passenger and freight, screw
Dominion	175	do 21	594·08	31 76	do do
Alpha	80	do 21	306·91	20 24	do do
		1889.			
La Tour	75	Dec. 15	154·43	14 16	do do
		1890.			
Marina		Feb. 22	32·46	6 28	Tug, screw.
		1889.			
Arcadia	25	Dec. 1	61·64	7 48	do and passenger, screw.
Electra	75	do 1	106·96	12 28	do do
		1890.			
Goliah		Mar. 11	146·83	10 88	do screw.
		1889.			
Alameda	12	Nov. 15	33·93	6 38	Passenger, screw.
		1890.			
City of Monticello	350	Mar. 27	1033·65	49·32	do and freight, paddle
New City		do 23	78·38	8 12	Tug, screw.
Dirigo		do 23	70·13	7 80	do
Ouanqoudy	300	do 25	294·75	19 76	Passenger ferry, paddle.
Captain		do 25	68·43	7 72	Tug, screw.
		1889.			
Admiral		Dec. 10	158·20	11 32	do paddle.
Star	300	do 12	461·03	24 44	Passenger and freight, paddle.
		1890.			
May Queen	330	Mar. 26	539·40	29 56	do do
Ada G.		do 26	102·08	9 08	Tug, paddle.
Hercules		do 26	87·11	8 48	do screw.
Champion		do 26	190·14	12 60	do paddle.
General		do 26	159·09	11 36	do do
		1889.			
Bellisle	150	Dec. 12	155·44	14 20	Passenger, stern-wheel.
		1890.			
Ralph E. S.		Mar. 28	27·82	6 12	Tug and fish, screw.
A. C. Whitney		April 2	62·67	7 52	do screw.
		1889.			
Beaver	70	Dec. 10	146 86	13 84	Freight and passenger, screw
		1890.			
Scotia		April 5	41·58	6 68	Tug, screw.
Acadia, Windsor	80	Jan. 5	74·21	7 96	Passenger, screw.
Hiawatha	300	April 6	229·79	17 20	do do
Pinafore	80	do 6	25·86	6 04	do do

STEAM Vessels Inspected, &c.—Maritime Provinces Division—*Continued.*

Name of Vessel.	Number of Passengers allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
				$ cts.	
Meadow Flower		April 10	6·56	5 28	Water-boat, screw.
Arbutus	80	do 12	46·75	6 84	Passenger do
		1889.			
Acadia, St. John	400	Dec. 12	621·44	32 84	do and freight, paddle
Quiddy	10	do 12	30·59	6 20	Tug and passenger do
		1890.			
Hero		April 15	127·63	10 08	Tug, paddle.
Neptune		do 16	71·15	7 84	do screw.
G. D. Hunter		do 16	67·97	7 68	do do
Maggie M		do 17	65·78	7 60	do do
		1889.			
Tourist	25	Oct. 15	11·78	5 44	Passenger yacht, screw.
Clifton	150	Dec. 12	138·21	13 52	do and freight, stern-wheel paddle.
		1890.			
Bertha		April 30	29·79	6 16	Tug, screw.
M. A. Starr	50	May 4	224·32	17 76	Passenger and freight, screw
Chebucto	300	April 20	108·33	12 32	do ferry, paddle.
Mic-Mac	350	do 20	150·63	14 00	do do
Bessie and Harry		May 4	22·00	5 88	Water-boat, screw.
Dartmouth	750	April 20	321·23	20 44	Passenger ferry, paddle.
Sir C. Ogle	200	do 20	126·09	13 04	do do
Shannon		May 8	75·11	8 00	Tug, screw.
Flushing	275	do 8	257·09	18 28	Passenger and freight, screw
Winnie		do 8	12·46	5 48	Tug, screw.
Peri		do 8	11·77	5 48	do do
Richard Doane		do 8	70·46	7 80	do do
		1889.			
Oscar Wilde	150	Dec. 12	115·00	12 60	Passenger and freight, stern-wheel paddle.
Enterprise	40	do 1	72·33	7 88	Passenger ferry, paddle.
		1890.			
Fearless		May 9	16·20	5 64	Tug, screw.
Norman		do 10	46·87	6 86	do do
Elfin	300	do 13	122·42	12 88	Passenger ferry, paddle.
Heather Belle	250	do 13	282·34	19 28	do paddle.
Southport	300	do 13	239·92	17 60	do ferry, paddle.
Fred. M. Bate		do 14	59·90	7 36	Tug, screw.
St. Lawrence	500	do 14	845·63	41 80	Ferry passenger, paddle.
Eldon	15	do 14	37·91	6 52	Passenger and freight.

STEAM Vessels Inspected, &c.—Maritime Provinces Division—*Continued.*

Name of Vessel.	Number of Passengers allowed.	Date Certificate Expires.	Gross Tonnage.	Tonnage Dues and Inspection Fees Paid.	Remarks.
				$ cts.	
Stanley		Gov't. steamer 1889.	914·00	No fees, Gov. steamer.	Passenger, screw.
Alice	20	Dec. 1	15·77	5 64	do ferry, screw.
Daisy		May 16	10·74	5 40	Tug, screw.
City of St. John	130	Dec. 1 1889.	709·12	36 36	Passenger and freight, paddle.
Princess of Wales	400	May 20 1890.	935·54	45 40	do do
William Aitkin		do 21	74·87	8 00	Tug, screw.
F. C. Balt	40	do 20	32·90	6 32	Passenger, screw.
Willoughby		do 22	6·41	5 24	Tug and fish-boat, screw.
Montague	250	do 14	129·55	13 16	Passenger, paddle.
Rimouski	70	do 25	124·70	13 00	do and freight, screw
Ada		June 6	3·66	5 16	Yacht, screw.
Florenceville	270	do 7	185·14	15 40	Passenger and freight, paddle, stern-wheel.
Eva Johnston		do 6	15·77	5 64	Tug, screw.
Bismarck		do 7	49·04	6 96	do paddle.
Fanchon		do 7	38·35	6 52	do stern-wheel.
Melbourne		do 7	4·00	5 16	do screw.
Worcester	275	do 4	1,332·56	61 32	Passenger and freight, screw
Lillie Glasier		do 8	209·31	13 36	Tug, paddle.
Alida		do 11	64·18	7 56	do screw.
Avon	120	May 24	64·66	7 56	Passenger, screw.
Carroll	300	June 18	1,372·29	62 88	do and freight, screw
Miramichi	60	do 20	75·18	8 00	do screw.
St. Andrew		do 20	76·64	8 04	Tug, screw.
Mindoo		do 20	13·09	5 52	do do
St. Nicholas	60	do 21	62·20	7 48	Passenger, screw.
St. George		do 21	160·57	11 40	Tug, paddle.
Neilson	100	do 21	64·34	7 56	Passenger, screw.
Grip		do 21	4·81	5 20	Tug, screw.
Muscott		do 22	70·50	7 80	do do
Sybella H	160	do 22	70·68	7 80	Passenger, ferry, screw.
Zulu		do 22	17·60	5 68	Tug, paddle.
Wee Laddie		do 22	16·60	5 68	do screw.

STEAM Vessels Inspected, &c.—Maritime Provinces Division—*Continued.*

Name of Vessel.	Number of Passengers allowed.	Date Certificate Expires.	Gross Tonnage.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
Derby		June 24	11·66	5 48	Tug, screw.
Laura		do 24	13·55	5 56	do do
Bessie		do 24	5·18	5 20	Tug and fishboat, screw.
Loyalist		do 24	17·57	5 72	Tug, paddle.
Bridgetown		do 24	14·66	5 60	do screw.
Lady Dufferin	75	do 25	47·48	6 88	Ferry, passenger, paddle.
Utopia		do 26	25·00	6 00	Tug, screw.
St. Louis		do 26	4·97	5 20	Yacht, screw.
East Riding		do 27	85·55	8 40	Tug, paddle.
Henrietta		do 27	19·12	5 76	do screw.
Novelty		July 5	42·66	6 68	do paddle.
Fred Clinch		do 5	23·87	5 92	do screw.
Lillie		do 6	71·64	7 88	do do
Kingsville		do 6	36·59	6 44	do do
Western Extension	336	Not issued	424·00		Ferry, passenger, paddle.
		1889.			
Soulanges	250	Dec. 10	318·37	20 72	Passenger, paddle.
David Weston	480	do 10	765·15	38 60	do do
		1890.			
Jessie A. Campbell		July 8	3·18	5 30	Tug, screw.
Mary Ann		do 10	25·38	6 00	do do
Lion		do 11	19·82	5 76	do do
Water Boat		do 12	6·17	5 24	Water-boat, screw.
Highland Mary		do 13	73·73	7 96	Steam lighter, twin screw.
Robbie Burns		do 13	88·93	8 56	do screw.
Arrow		do 13	10·02	5 40	Yacht, screw.
Neptune	50	do 16	138·69	13 52	Passenger and freight, screw
Elmor M. Cates		do 18	58·81	7 26	Tug, screw.
Zaidee		do 18	18·63	5 72	do do
Annie		do 18	13·28	5 52	Water-boat, screw.
Gladiator		do 18	70·40	7 80	Tug, screw.
William		Not issued	210·02	13 40	Freight, screw.
M. & E. Rudderham		July 24	33·54	6 32	Tug, screw.
Lady of the Lake		do 19	61·10	7 44	Tug, paddl

Steam Vessels Inspected for the Year ended 7th December, 1889.

MARITIME PROVINCES DIVISION.

Name of Vessel.	Number of Passengers allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
Magnolia	175	July 22	260·50	18 40	Passenger, freight, paddle.
Gipsy		do 20	16·70	5 68	Tug, screw.
May Queen	200	July 20	142·09	13 68	Passenger and freight, paddle.
Marion	300	do 22	478·49	27 12	do do
Lennox	100	do 23	66·29	7 64	Passenger ferry do
Norwegian	200	do 24	202·91		Government steamer, passenger ferry, screw.
Effort		do 24	23·38	5 92	Yacht and tug, screw.
Mary Odell		do 25	22·55	5 92	Fish-boat, screw.
Merrimac		do 26	85·80	8 40	Tug, screw.
St. Michael		do 27	39·20	6 56	do
Joe Edwards	30	Aug. 12	34·66	6 40	Passenger ferry, screw.
Freddie V		do 12	26·60	6 04	Tug, screw.
David Duncan		do 13	20·59	5 84	do
Maud		do 14	12·59	5 48	do
Evangeline	135	do 14	78·74	8 16	Passenger, screw.
Yuba	15	do 16	12·40	5 48	Passenger ferry, screw.
Molega			9·19	5 36	Passenger, screw.
Mayflower		Aug. 21	5·92	5 30	Fish-boat do
La Have		do 21	49·27	6 96	Tug, screw.
Gambrinus		Sept. 4	28·36	6 12	do
St. John		do 7	47·28	6 88	do
L. Boyer		do 18	60·00	7 40	do
Geo. McKenzie		Not issued.	120·00		Government dredge.
Bridgewater	200	do	207·79	16 32	Passenger and freight, screw.
Delta	6	Sept. 27	873·21	42 92	do
Egerton	165	Oct. 12	112·10	12 48	Passenger ferry, paddle.
St. Pierre	60	Sept. 11	496·44	27 84	Passenger and freight, screw.
Henry Hoover		Oct. 19	54·64	9 40	Tug, screw.
Jessie Gray		Not issued.	76·00	11 08	Steam lighter, stern-wheel.
Marguerite		Nov. 4	19·66	6 60	Yacht, screw.
Dolphin		Not issued.	12·78	6 04	Lighter do

STEAM Vessels Inspected, &c.—Maritime Provinces Division—*Continued.*

Name of Vessel.	Number of Passengers allowed.	Date Certificate Expires.	Gross Tonnage.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
Leonora		Dec. 3	5·00	5 40	Yacht do
Coila		Not issued.	325·45	34 00	Freight do
	11,654		24,075·76	1,813 20	

DOUGLAS STEVENS,
Steamboat Inspector.

STEAM Vessels not Inspected for the Year ended 31st December, 1889.

MARITIME PROVINCES DIVISION.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	Dues and Fees.	Remarks. — Why not Inspected and Class of Vessel.
			$ cts.	
Selina	40·09	27·26		Laid up ; barge ; screw.
Argus	26·74	18·96		Government revenue boat ; screw.
Rescue	124·09	84·29		Out of port ; wrecker and tug ; screw.
Halifax	1,738·45	957·78		Deferred ; freight and passenger ; screw.
Mascott	22·88	15·05		Laid up ; tug and passenger ; screw.
Zuleika	6·53	4·44		do yacht ; screw.
Island Gem	15·62	10·63		do fish boat ; screw.
Salvor	44·93	34·90		Out of port ; wrecker and lighter ; screw.
Winnie	3·00	1·82		Laid up ; tug ; screw.
Mayflower	377·00	169·00		do Government ferry ; twin-screw.
St. Lawrence		290·01		Government dredge ; screw.
Northern Light	393·00	234·00		do passenger and mail ; screw.
St. Patrick	38·92	25·78		Laid up ; tug ; screw.
Dream	44·51	30·27		Government revenue boat ; screw.
Sarah H	81·46	68·48		Out of use ; tug ; paddle.
Sea King	128·63	87·47		Out of district ; tug ; screw.
Squirrel	13·11	8·97		Laid up ; tug ; screw.
Secret	466·56	293·17		Laid up, Portland, U.S. ; passenger ; paddle.
Empress	929·60	660·14		do do
St. George	37·53	18·76		Laid up ; tug ; screw.
Meta	5·00	1·00		do do
Laddie	42·16	28·58		do do
John Williams	4·95	3·37		do do
Islet	5·05	3·44		do do
Totals	4,697·68	3,151·12		

DOUGLAS STEVENS,
Steamboat Inspector.

Steam Vessels Inspected for the Year ended 31st December, 1889.

MARITIME PROVINCES DIVISION.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
Alpha	80	Feb. 21..	211	20 24	Passengers, &c.
		1889.			
Alameda	12	Dec. 15..	33	6 36	do
Arcadia	25	do 1..	61	7 48	do
Acadia	400	do 15..	621	32 84	do
		1890.			
Acadia	150	Jan. 15..	74	7 90	do
Avon	120	May 24..	64	7 56	do
		1889.			
Alice	20	Dec. 1..	15	5 64	do
		1890.			
Arbutus	80	May 21..	46	6 84	do
		1889.			
Bellisle	150	Dec. 12..	155	14 20	do
Beaver	70	do 10..	146	13 84	do
		1890.			
Bridgewater		Sept. 25..	200	16 32	do
		1889.			
City of St. John	130	Dec. 1..	709	36 36	do
		1890.			
Chebucto	300	April 20..	108	12 32	Ferry boat.
		1889.			
Clifton	150	Dec. 12..	138	13 52	Passenger, &c.
City of Monticello	350		1,033	49 32	do
		1890.			
Carroll	300	Aug. 14..	1,372	62 88	do
Dominion	175	Feb. 21..	594	31 76	do
		1889.			
David Weston	480	Dec. 10..	765	38 60	do
		1890.			
Delta	6	Sept. 26..	873	42 92	do
Dartmouth	750	April 20..	331	20 44	Ferry steamer.
		1889.			
Enterprise	40	Dec. 1..	92	7 86	do
		1890.			
Elfin	200	May 13..	122	12 88	do
Evangeline	135	Aug. 30..	78	8 16	Passenger, &c.
		1889.			
Electra	75	Dec. 1..	106	8 66	do
		1890.			
Eldon	15	May 14..	31	6 52	do
Egerton	165	Oct. 18..	112	12 48	Ferry steamer.
Flushing	275	July 9..	257	18 28	Passenger, &c.
Florenceville	270	June 7..	185	15 40	do
Frank C. Batt	40	May 17..	32	6 32	Ferry steamer.
Heather Belle	250	do 13..	189	19 28	Passenger, &c.
Hiawatha	300	April 25..	229	17 20	do

STEAM Vessels Inspected for the Year, &c.—Maritime Provinces Div.—*Con.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
Harlaw	75	April 1..	451	26 04	Passenger, &c.
Halifax	400	Oct. 15..	1,738	77 52	do
Joe Edwards	30	Aug. 30..	34	6 40	Ferry boat.
Lady Dufferin	75	June 27..	47	6 88	Ferry boat.
Lennox	100	July 30..	66	7 64	do
		1889.			
La Tour	75	Dec. 15..	152	14 16	Passenger, &c.
		1890.			
Montague	250	May 14..	129	13 16	Ferry boat.
Micmac	350	do 7..	150	14 00	do
M. A. Starr	50	do 7..	244	17 76	Passenger, &c.
Mirimachi	60	June 27..	75	8 00	do
Marion	300	July 26..	478	27 12	do
		1889.			
May Queen	330	Dec. 12..	539	29 56	do
		1890.			
May Queen	200	July 26..	142	13 68	Ferry boat.
Magnolia	175	do 26..	260	18 40	Passenger, &c.
Nelson	100	June 28..	68	7 56	Ferry boat.
Norwegian	200	July 24..	202	7 56	Government ferry boat.
Neptune	50	do 24..	138	13 52	Passenger, &c.
		1889.			
Oscar Wilde	150	Dec. 12..	115	12 60	do
		1890.			
Princess of Wales	400	May 17..	936	45 40	do
Pinafore	80	do 25..	25	6 04	Ferry boat.
		1889.			
Quiddy	10	Dec. 10..	30	6 20	Passenger, &c.
		1890.			
Rimouski	70	July 24..	124	13 00	do
		1889.			
Soulanges	250	Dec. 10..	318	20 72	do
Star	300	do 12..	461	26 44	do
		1890.			
Southport	300	May 13..	186	17 60	Ferry boat.
Sir C. Ogle	200	April 20..	126	13 04	do
Sybella H	160	June 26..	47	7 80	do
St. Pierre	60	Sept. 11..	496	27 84	Passenger, &c.
Ouangondy	300	April 27..	294	19 76	Ferry boat.
St. Lawrence	500	May 14..	846	41 80	Passenger, &c.
St. Nicholas	60	June 27..	62	7 48	Ferry boat.
		1889.			
Tourist	25	Dec. 1..	12	5 44	Passenger, &c.

STEAM Vessels Inspected for the Year, &c.—Maritime Provinces Div.—*Cou.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
Worcester	275	Aug. 20..	1,332	61 32	Passenger, &c.
Yarmouth	350	Sept. 28..	1,432	80 08	do
Yuba	15	Aug. 27..	12	5 48	Ferry boat.
Total			20,748	1,299 82	

C. R. COKER,
Dominion Inspector of Hulls, &c.

Steam Vessels Inspected for the Year ended 31st December, 1889.

MANITOBA, KEEWATIN AND NORTH-WEST TERRITORIES DIVISION.

Name of Vessel.	Number of Passengers allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
Marquette		April 20	149·07	10 96	Stern-paddle, freight.
Glendevon		1889. June 3	104·05	9 16	Screw, fishing tug.
Glendevon	25	1890. June 3		3 00	do passenger and freight.
Aurora	58	May 1	224·50	17 00	Paddle do
Cruiser		do 4	11·59	5 48	Screw, tug.
D. L. Mather		do 6	103·32	9 12	do
Annie Mac	40	do 6	25·22	6 00	Screw, ferry (Rat Portage and Keewatin).
Couchiching		do 7	105·42	9 20	Screw, tug.
Alma T.		do 7	15·78	5 64	do
Keewatin		do 10	41·25	6 64	do
Mary Hatch		do 11	118·45	9 72	Paddle, tug.
Queen		do 11	31·64	6 28	Screw, tug.
Algoma		do 13	99·13	8 96	do
Victoria		do 17	40·10	6 60	do
Ida (of Port Arthur)		do 21	19·37	5 76	Screw, fishing boat.
Frank Perew		do 21	43·02	6 72	Screw, tug.
Three Friends		do 22	97·35	8 91	do
Salty Jack		do 22	44·62	6 80	do
Kate Marks		do 22	54·15	7 16	Screw, fishing boat.
Kakabeka	200	do 22	112·67	12 52	Screw, ferry (Port Arthur and Fort William).
Richmond		do 26	14·32	5 56	Screw, fishing boat.
Mary Ann		do 27	86·00	8 44	Screw, tug.
Antelope	250	do 29	142·61	13 72	Stern-paddle, passenger.
Lady Ellen		June 1	18·57	5 76	Screw, fishing tug.
Ogema		do 1	62·05	7 48	Screw, tug.
Colville		1889. June 3			do
Colville	25	1890. June 3	164·41	14 56	Screw, passenger and freight.
Red River	25	do 14	166·47	14 64	do do
Miles		July 2	63·04	7 52	do fishing tug.
Princess	75	do 5	530·58	29 24	Paddle, passenger and freight.
Highland Maid	40	do 8	106·24	12 24	Screw do

STEAM Vessels Inspected for the Year, &c.—Manitoba, Keewatin and North-West Territories Division—*Con.*

Name of Vessel.	Number of Passengers allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
Thistle		July 8	23·33	5 92	Screw, fishing boat.
Rambler		do 13	13·51	5 56	do tug.
Percy Sutherland		do 13	33·55	6 36	do
Dryberry		do 16	11·72	5 48	do
Empress	100	do 19	129·28	13 16	Screw, passenger and freight.
Caro		do 20	14·47	5 56	do tug.
Harry Montgomery		do 29	3·65	5 16	do fishing boat.
Ida (of Winnipeg)		Aug. 13	16·24	5 64	do tug.
Saskatchewan		do 28	336·84	21 48	Paddle, freight.
Mountain Belle	10	Oct. 21	·90	5 08	Screw, pleasure boat on Bow River, at Banff.
			3,378·48	360 19	

EDMUND R. ABELL,
Steamboat Inspector.

Steam Vessels not Inspected for the Year ended 31st December, 1889.

MANITOBA, KEEWATIN AND NORTH-WEST TERRITORIES DIVISION.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	Remarks.
Alice Sprague	98·49	62·05	Not in use. Stern-paddle, Red River excursion boat.
Athabasca	.....	.....	Property of the Hudson's Bay Company, on the Athabasca River. Not registered.
Grahame	332·18	220·04	Stern-paddle, freight, at too great a distance from office, viz., Fort Chipewyan, N.W.T.
Marquis	753·76	474·87	Stern-paddle, not in use. Passenger and freight on the North Saskatchewan River. Water too low this season for steamboat navigation.
Northcote	461·34	290·65	Stern-paddle, North Saskatchewan River, passenger and freight. Water too low for navigation.
North-West	425·00	305·00	Stern-paddle, Saskatchewan River, passenger and freight. Water too low for navigation.
Rover	4·07	2·77	Screw, tug, on Lake of the Woods. Not in use.
Wrigley	90·04	61·23	Screw, freight, on McKenzie River. Too great a distance from office.
Victoria Sir Hector	.....	.....	Screw, tugs, dredge tenders, Dominion Government property.
	2,164·88	1,416·61	

Note.—I have not been officially informed if dues and fees have been paid, or requested to be paid, to the Customs Department.

EDMUND R. ABELL,
Steamboat Inspector.

STEAM Vessels Inspected for the Year ended 31st December, 1889.

BRITISH COLUMBIA DIVISION.

Name of Vessel.	Number of Passengers allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
Bark Boscovitz	150	Jan	269·08	18 76	
Islander	500	do	1,495·29	67 80	
Rustler	12	do	56·84	7 28	
Oriole		1889. Sept	4·45	5 20	Dues and fees for 1888.
Pearl		1890. Feb	75·27	16 00	Two years dues and fees.
Transet Mills		do	102·66	12 12	
Sardonyx	150	do	561·38	30 44	
Saturna		do	22·65	5 88	
K. de K	25	do	61·67	7 48	
Etta White	20	do	97·35	8 92	
Hope	25	do	78·49	8 16	
Adelaide	100	March	151·02	14 04	
Wm. Irving	200	do	737·88	37 52	
Gladys	70	do	146·02	13 84	
Fairy Queen	40	do	24·94	6 00	
Muriel		do	44·13	6 76	
Clara Port		April	25·55	6 04	
Rithet	250	1889. Oct	816·29	40 68	
Florence		1890. April	59·44	7 40	
Danube	306	do	886·89	43 48	
Nellie Taylor		do	5·88	5 20	
Leonora	15	May	33·00	6 32	
Alert		do	43·81	6 76	
Tepic	40	do	74·81	7 84	
Buzz		do	12·59	5 52	
Swan		do	16·65	5 68	
Winnifred		June	12·97	5 52	
Emma	15	do	35·00	6 40	
Daisy	15	do	86·16	8 36	
Badger		do	49·93	14 00	Two years dues and fees.

STEAM Vessels Inspected, &c.—British Columbia Division—*Continued.*

Name of Vessel.	Number of Passengers allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
Delta		June	14·19	5 56	
Horse Shoe		do	17·71	5 72	
May Queen		do	14·10	5 56	
Clara W. Young		do	30·75	6 24	
Joe Adams		do	11·89	5 48	
Spitfire		do	8·00	5 32	
Cariboo Fly	60	do	281·82	19 28	
Senator	30	do	27·63	6 08	
Yosemite	400	do	1,525·03	69 00	
Wellington		do	16·03	5 64	
Agnes		July	15·61	5 64	
Princess Louise	300	do	931·76	45 28	
Eliza		do	7·35	5 32	
Mamie	15	do	89·61	8 60	
Rainbow	60	do	207·67	16 32	
Active	20	Aug	171·74	14 86	
Skidigate		do	37·08	6 48	
Lorne	30	Sept	287·96	19 50	
Mermaid	20	do	66·25	7 64	
Falcon		do	52·44	7 12	
Lottie		do	29·24	6 16	
Vancouver		do	49·96	7 00	
Belle	20	do	66·62	7 68	
Emma	15	June	35·00	5 00	Special inspection.
Glad Tidings		Oct	43·02	8 45	
Gipsy		do	49·63	9 00	
Iris		do	19·32	6 60	
Stella		do	16·32	6 28	
Rob. Dunsmuir	85	do	230·75	34 48	
Saturna		do	22·05	5 00	Special inspection.
Pilot	25	Sept	183·08	15 32	
Delaware		Nov	575·00	54 00	

STEAM Vessels Inspected, &c.—British Columbia Division—*Concluded.*

Name of Vessel.	Number of Passengers allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
Isabel	60	Nov	445·93	43 68	
Mamie	15	July	89·60	5 00	Special inspection.
Maude	45	Nov	174·49	14 00	
Wilna		do	4·04	5 32	
Nanamio		do	70·79	10 68	
Lilly		do	33·57	7 68	

W. A. RUSSELL,
Steamboat Inspector.

Steam Vessels Not Inspected, for the Year ended 31st December, 1889.

BRITISH COLUMBIA DIVISION.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	Dues and Fees.	Remarks. Why not Inspected and Class of Vessel.
			$ cts.	
Alexander	331·61	191·57	34 56	Out of service.
Alice	54·10	34·4	9 32	do
Amelia	430·97	222·08	42 48	do machinery under repair.
Bella	8·01	5·61	5 64	Beyond reaching her.
Beaver	159·02	109·02	20 72	Stranded.
Despatch	37·10	23·38	7 96	In the Kootenay District; did not consider it advisable to incur expense of trip as I will inspect 1890.
Duchess	145·48	91·66	19 60	
Evangeline	13·86	8·97	6 12	
Galena	47·64	33·35	8 84	
Hyack	33·59	31·33	7 72	Out of service.
Idaho	12·04	8·43	5 93	In the Kootenay District and at Kamloops.
Kamloops	425·78	268·24	42 08	
Lady Dufferin	59·23	52·38	9 80	
Marion	14·98	9·33	6 20	
Midge				Out of service.
Morris	11·66	8·04	5 96	Beyond reaching them, but at great expense.
Nell	207·97	125·47	24 64	
Normansell	4·04		5 32	Out of service.
Otter	289·07	219·64	31 32	Machinery removed.
Peerless	307·47	256·03	32 56	At Kamloops.
Reliance	313·94	215·69	33 02	Out of service.
Red Star, No. 1	14·81	10·00	6 20	do
Red Star, No. 2	36·95	25·71	7 96	At Spallumcheen.
Rustler	39·65	25·	8 20	Propelling power removed.
Spallumcheen	54·29	50·54	9 32	At Kamloops.
Spratt's Ark	307·88	143·04	32 64	To be inspected.
Surprise	16·80	10·	6 20	Machinery removed.
Thornton	31·64	28·64	7 56	This vessel is at Alaska; seized by U. S. Government.
Victoria	364·75	282·22	37 20	Out of service.
Western Globe	831·59	725·71	74 56	do
Westminster	18·29	14·17	6 52	Will inspect 1890.
Wilson G. Hunt	467·96	350·36	45 36	Not fit for service.
Total	5,089·97	3,578·56	601 51	

W. A. RUSSELL, *Steamboat Inspector.*

Steam Vessels Inspected for the Year, ended 31st December, 1889.

BRITISH COLUMBIA DIVISION.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
				$ cts.	
Islander	500	1890. January	1,495·29	67 80	
Barbara Boscowitz	150	do	269·08	18 76	
Rustler	12	do	57·	7 28	
Sardonyx	150	February	561·38	30 44	
K de K	30	do	61·67	7 48	
Etta White	20	do	97·35	8 92	
Hope	25	March	78·49	8 16	
Muriel	25	do	44·13	6 76	
Gladys	90	do	146·02	13 84	
Adelaide	100	do	151·02	14 04	
Fairy Queen	40	do	24·96	6 00	
Wm. Irving	200	do	737·86	37 52	
R. P. Rithet	250	1889. October	816·69	40 68	
Danube	306	1890. April	886·89	43 48	
Nellie Taylor	15	do	5·80	5 20	
Leonora	15	May	33·00	6 32	
Daisy	15	June	84·16	8 36	
Tepic	40	do	70·87	7 84	
Byrnes' Scow No. 1	150	1889. June		5 00	For one day only.
do No. 2	150	do		5 00	do
do No. 3	150	do		5 00	do
do No. 4	120	do		5 00	do
Scow Florence	120	do		5 00	do
do Badger	100	do		5 00	do
Etheridge's Scow No. 1	40	do		5 00	do
do No. 2	80	do		5 00	do
Emma	15	1890. June	35·00	6 40	
Cariboo Fly	60	do	281·82	19 28	
Yosemite	400	do	1,525·03	69 00	
Senator	30	do	27·63	6 08	

STEAM Vessels Inspected for the Year, &c.—British Columbia Division—*Con.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1890.		$ cts.	
Princess Louise	300	July	931·76	45 28	
Rainbow	60	do	207·64	16 32	
Mamie	15	do	89·60	8 60	
Active	20	August	171·76	14 86	
Bell	20	do	67·	7 68	
Mermaid	20	September	66·25	7 64	
Lorne	30	do	287·96	19 52	
Maude	45	November	174·99	22 00	
Robert Dunsmuir	85	October	231·75	26 48	
Pilot	25	September	183·08	15 32	
Isabel	60	November	445·93	43 68	
Skedigate	20	August	37·08	6 48	
Total	4,098		10,385·92	718 50	

R. COLLISTER,
Hull Inspector.

STEAM Vessels Not Inspected for the Year, ended 31st December, 1889.

BRITISH COLUMBIA DIVISION.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	Dues and Fees.	Remarks. Why not Inspected and Class of Vessel.
			$ cts.	
Alexander	331·61	191·57	34 56	Out of service.
Amelia	430·97	222·08	42 48	do
Beaver	159·02	109·02	20 72	Vessel stranded.
Reliance	313·94	215·69	33 02	Out of service.
Western Slope	831·54	725 71	74 56	do
Total	2,067·08	1,464·07	205 34	

There are several others that do not come under my inspection.

R. COLLISTER,
Hull Inspector.

STATEMENT of the Number of Steam Vessels added to the Dominion during the Year ended 31st December, 1889; their Class and Horse Power; whether of Wood or Iron; their Gross and Registered Tonnage; where Built, and Where and How Employed.

Name of Vessel.	Horse-power.	Class.	Wood or Iron.	Gross Tonnage.	Registered Tonnage.	Where Built.	Where and How Employed.
Interocean	6·53	Screw	Wood	147·83	98·01	Collingwood, 1888	Meaford and Parry Sound, freight.
Maggie May	3·33	do	do	45·51	30·95	Meaford, 1889	North Shore, tug.
Nautilus	·67	do	do	8·65	5·89	Humberstone, 1889	Welland Canal, passenger.
Truant	3·33	do	do	23·31	19·62	Toronto, 1889	Toronto and Island, passenger.
Siesta	·53	do	do	3·46	2·35	do 1889	Lake Simcoe, passenger.
Favourite	31·80	do	do	491·33	334·10	Meaford, 1889	Meaford and Parry Sound, passenger.
Island Queen	2·70	do	do	23·31	19·62	Toronto, 1889	Toronto and Island, passenger.
Abeona	21·60	do	do	45·60	31·01	do 1889	Lakes, yacht.
Manitoba	204·16	do	Steel	2639·31	1765·32	Owen Sound, 1889	Owen Sound and Port Arthur, passenger.
Halcro	1·20	do	Wood	7·91	5·38	Collingwood, 1889	Georgian Bay, yacht.
Maud S	2·10	do	do	14·40	10·76	do 1889	Parry Sound, tug.
Herbert M	2·13	do	do	25·98	17·67	Hollow Lake, 1887	Hollow Lake, tug.
Sweet Mary	3·33	do	do	13·12	8·93	Harvey Harbour, 1889	Georgian Bay, tug.
Douglas	1·20	do	do	5·33	3·63	Midland, 1888	Byng Inlet, tug.
Coponaning	2·13	do	do	Not registered.		French River, 1888	French River, tug.
S. R. Norcross	6·53	do	do	Not registered.		do 1886	do
Mispah	2·13	do	do	18·05	12·28	Port Credit, 1889	Port Credit, fish tug.
P. M. Campbell	6·53	do	do	48·57	33·03	Collingwood, 1889	Georgian Bay, tug.
	301·96			3561·67	2398·55		

W. J. MENEILLEY,
Steamboat Inspector, West Ontario and Huron.

STATEMENT of the Number of Steam Vessels added to the Dominion, during the Year ended the 31st December, 1889, their Class and Horse Power; whether of Wood or Iron; their Gross and Registered Tonnage; where Built, and where and how Employed.

Name of Vessel.	Horse Power.	Class.	Wood or Iron.	Gross Tonnage.	Registered Tonnage.	Where Built.	Where and How Employed.
Umbria	6·53	Screw	Wood	43	29	Port Dalhousie, Ont., 1889	Welland Canal, tug.
Frankie	1·30	do	do	24	16	Wallaceburg, Ont., 1888	Sydenham River, yacht.
Maud L	2·13	do	do	14	10	Sauble River, Ont., 1888	Saugeen and Sauble Rivers, tug.
Modjeska	160·00	Twin screw	Steel	455	23	Yoker, Scotland, 1889	Hamilton and Toronto, passenger.
Nina	1·63	Screw	Wood	11	9	Rond Eau, Ont., 1889	Lake Erie, fishing tug.
Undine	2·13	do	do	17	15	Toronto, Ont., 1889	Toronto, pleasure yacht.
Gordon Jerry	6·53	do	do	124	84	River Ruscome, Ont., 1884	Great Lakes, freight barge.
Howard B. Payne	6·53	do	do	33	22	Erie, Pa., U.S.A., 1871	Welland Canal, tug.
	186·78			721	208		

O. P. ST. JOHN,
Steamboat Inspector, West Ontario and Huron Division.

STATEMENT of the Number of Steam Vessels added to the Dominion, during the Year ended 31st December, 1889, their Class and Horse Power; whether of Wood or Iron; their Gross and Registered Tonnage; where Built, and where and how Employed.

Name of Vessel.	Horse Power.	Class.	Wood or Iron.	Gross Tonnage.	Registered Tonnage.	Where Built.	Where and How Employed.
Modjeska		A 1	Steel	454·99	23·36	Yoker, County of Dumbarton	A passenger boat, between Toronto and Hamilton.
Island Queen		A 2	Wood	23·31	19·62	Toronto	Island ferry.
Truant		A 2	do	23·31	19·62	do	do
Inter Ocean		A 2	do	147·83	98·01	do	Georgian Bay.
Manitoba		A 1	Steel	2639·31	1705·32	Owen Sound	Not running.
Dixie			Wood	37·02	25·17	Port Robertson	Passenger, Niagara River.
Algonquin	150	A 1	Steel	1805·61	1172·02	Yoker, County of Dumbarton	Freight, all the Lakes.
Rosedale	106	A 1	do	1040·49	659·78	Sunderland, England	do
Favourite		A 1	Wood	491·33	334·10	Meaford	Freight and passenger, Owen Sound and Parry Sound.
	256			6663·20	4067·00		

THOS. HARBOTTLE,
Hull Inspector, West Ontario Division.

STATEMENT of the Number of Steam Vessels added to the Dominion, during the Year ended 31st December, 1889, their Class and Horse Power; Whether of Wood or Iron; their Gross and Registered Tonnage; where Built, and where and how Employed.

Name of Vessel.	Horse Power.	Class.	Wood or Iron.	Gross Tonnage.	Registered Tonnage.	Where Built.	Where and How Employed.
Antelope	5·20	Screw	Wood	19·59	10·88	Kingston	Kingston and Prescott, passengers.
Daisy	2·13	do	do	7 20	4·90	Peterboro'	Rice Lake and tributaries do
Alice Ethel	6·76	Paddle	do	71·75	45·15	Lindsay	Victoria and Peterboro' waters, passengers.
Dorothy	0·53	Screw	do	10·09	6·16	Kingston	Pleasure yacht.
Ina	1·20	do	do	10·78	7·33	do	do
Daisy	1·00	do	do	4·89	3·33	Napanee	do
Where Now	7·76	do	do	47·78	26·33	Kingston	do
Ontario Belle	1·20	do	do	7·00		Carleton Place	do
Nellie	1·35	do	do	6·82	3·33	Kingston	do
Ranger	2·13	do	do	13·83	8·18	do	Rideau Canal, tug boat.
W. L. Davis	4·00	do	do	45·72	36·92	Detroit, U.S., 1882	Sault Ste. Marie, tug.
Algoma	6·66	do	do	31·96	19·16	Fort Howard, U.S., 1874	do
Clara Hickler	4·00	do	do	41·97	32·07	Sault Ste. Marie, Mich., 1882	do
	43·92			319·38	203·74		

EDWARD ADAMS,
Steamboat Inspector.

STATEMENT of the Number of Steam Vessels added to the Dominion, during the Year ended 31st December, 1889, their Class and Horse Power, whether of Wood or Iron; their Gross and Registered Tonnage; where Built, and Where and How Employed.

Name of Vessel.	Horse Power.	Class.	Wood or Iron.	Gross Tonnage.	Registered Tonnage.	Where Built.	Where and How Employed.
E. G. Laverdure	4·00	Screw	Wood	54	49	Ottawa	Ottawa River, carrying passengers.
Islemay	1·20	do	do	7	.....	Brockville	do principally.
Albert	45·06	Side-wheel.	do	216	145	Aylmer	do towing.
Mona	3·33	Screw	do	25	17	Montreal	St. Lawrence, towing.
Mansfield	10·80	do	do	121	103	Ottawa	Ottawa and Gatineau, ferry.
John A.	3·33	do	do	19	13	Montreal	Lake Magog, towing.
Egerton	37·50	Side-wheel.	do	112	70	Sorel	Prince Edward Island and Pictou, ferry.
Hall	7·50	Screw	do	247	136	Montreal	Ottawa River, freight and passenger.
Clyde	2·13	do	do	29	26	Lake Temiscamingue	Lake Temiscamingue, towing and passenger.
Meteor	20·93	do	do	132	114	do	do do
Dora	3·33	do	do	48·32	44·13	do	do do
Sovereign	38·53	Side-wheel.	Steel	637	247	Montreal	Montreal and Carillon, passenger.
Sandy	3·33	Screw	Wood	29	20	Kington	Lake St. Francis, towing.
Total	180·97			1676·32	984·13		

JOHN BURGESS,
Steamboat Inspector.

STATEMENT of the Number of Steam Vessels added to the Dominion, during the Year ended 31st December, 1889, their Class and Horse Power, whether of Wood or Iron; their Gross and Registered Tonnage; where Built, and Where and How Employed.

Name of Vessel.	Horse Power.	Class.	Wood or Iron.	Gross Tonnage.	Registered Tonnage.	Where Built.	Where and How Employed.
Marie-Louise	28·16	Side-wheel	Wood	99·45	62·65	Lévis, 1889	Bersiamiste River, tug, towing, etc.
Ida	10·80	Screw	do	26·41	6·77	Quebec, 1889	Quebec Harbour, tug.
Lord Standly	114·52	do	Steel	276·31	85·58	Scotland, 1889	Wrecking tug.
Montmorency	5·16	do	Wood	17·81	12·11	Quebec, 1889	Quebec Harbour, tug.
Daw	18·13	do	do	51·00	38·14	Sorel, 1889	Lachine and Beauharnois, carrying passengers, pleasure yacht.
Vulcan	18·13	do	do	22·15	15·06	Dalhousie, 1889	Dalhousie and Magoushka, carrying passengers.
Swan	1·02	do	do	Not registered.			Lake Edouard, pleasure yacht.
Thames	150·00	do	Iron	1683·00	1064·00	London, England, 1871	Montreal and Sydney, freight.
Richelieu	11·23	do	Wood	Measurement not reported.		Sorel, 1889	Sorel and St. Hilaire, carrying passengers.
Total	356·15			2176·13	1284·31		

JOS. SAMSON,
Boiler and Machinery Inspector.

STATEMENT of the Number of Steam Vessels added to the Dominion, during the Year ended 31st December, 1889, their Class and Horse Power, whether of Wood or Iron; their Gross and Registered Tonnage; where Built, and Where and How Employed.

Name of Vessel.	Horse Power.	Class.	Wood or Iron.	Gross Tonnage.	Registered Tonnage.	Where Built.	Where and How Employed.
Mansfield			Wood	120·78	103·14	Ottawa	Ottawa and Rideau Rivers, carrying passengers.
E. G. Laverdure			do	54·00		do	do do
Clyde			do	29·16	26·20	Lake Temiscamingue	Lake Temiscamingue do
Hall			Composit.	246·94	136·30	Montreal	Montreal and Ottawa do and freight.
Toneata			Wood	14·00		Kingston	Lake Temiscamingue do
Meteor			Composit.	131·81		Lake Temiscamingue	do do
Dora			Wood	48·00	44·00	do	do do
Richelieu			do			Sorel	Sorel and St. Hilaire do
Thames			Iron	1683·00	1064·00	Scotland	Montreal and Sydney, carrying freight.
Daw			Wood	51·00	33·14	Sorel	Lachine and Beauharnois, carrying passengers.
Vulcan			do	22·15	15·06	Dalhousie	Dalhousie and Magoushka do
Swan			do	Not registered.		Unknown	Lake Edouard, pleasure yacht.
Ripple			do			do	do do
Belle			do			do	Lake St. John do
Emma			do			do	Lake Edouard do
Sovereign			Iron	636·27	323·42	Montreal, 1889	Montreal and Carillon, paddle, passenger.
				3037·11	1750·26		

PIERRE D. BRUNELLE,
Hull Inspector.

STATEMENT of the Number of Steam Vessels added to the Dominion during the Year ended 7th December, 1889, their Class and Horse Power, whether of Wood or Iron, their Gross and Registered Tonnage, where Built, and where and how Employed.

Name of Vessel.	Horse-Power.	Class.	Wood or Iron.	Gross Tonnage.	Registered Tonnage.	Where Built.	Where and How Employed.
Meadow Flower	1·2	Screw	Wood	6·56	4·46	Dartmouth, N.S, 1885	Canso, N.S., water boat.
Arbutus	13·5	do	do	46.75	31·80	Yarmouth, N.S., 1889	Moncton and Hopewell, N.B., passenger.
Hero	21·7	Paddle	do	127·63	80·51	Portland, N.B., 1889	Fredericton Booms, N.B., tug.
Maggie M.	29·6	Screw	do	65·78	44·73	do 1888	St. John and Bay of Fundy, tug.
Fred M. Batt	14·13	do	do	59·90	38·34	Mount Stewart, P.E.I., 1888	Charlottetown, P.E.I., tug.
Stanley	200·6	do	Steel	914·00	.....	Glasgow, Scotland, 1888	P. E. Island & Pictou, N.S. (Gov't), passenger, mails, &c.
Mascott	32·4	do	Wood	70·50	47·94	Chatham, N.B., 1888	Miramichi River, N.B., tug.
Wee Laddie	6·4	do	do	16·60	11·29	do 1888	do do
Bridgetown	2·4	do	do	14·66	9·97	do 1889	do do
Kingsville	6·8	do	do	36·59	24·88	St. John, N.B., 1889	St. John, N.B., tug.
Jessie A. Campbell	1·2	do	do	3·18	2·64	Moncton, N.B., 1889	Shediac Harbor, tug.
M. & E. Rudderham	18·37	do	do	33·54	24·44	N. Sydney, C.B., 1889	Sydney Harbor, C.B., tug.
Mary Odell	3·33	do	do	22·55	13·18	Bristol, Maine, 1881	Strait of Canso, N.S., fish boat.
Molega	1·2	do	do	9·19	6·25	Cameron Lake, N.S., 1888	Pouhook Lake, Queen's Co., N.S., tug.
Mayflower	1 2	do	do	5·92	2·99	Mahone Bay, N.S., 1888	La Have River, N.S., fish boat.
Zuluka	5·04	do	do	6·53	4·44	Dartmouth, N.S., 1889	Halifax Harbor, yacht.
Egerton	37·5	Paddle	Steel	112·10	70·62	Sorel, Quebec, 1889	Pictou and New Glasgow, N.S., passenger.
Jessie Gray	6·66	Stern-wheel.	Wood	76·00	47·93	Marble Mountain, C.B., 1889	Bras d'Or Lakes, N.S., lighter.
Leonora	1·2	Screw	do	5·00	Not reg.	Ontario (supposed), 1884	Halifax, N.S., yacht.
*City of Monticello	83·3	Paddle	Iron	1033·65	565·62	Wilmington, Del., 1866; rebuilt, 1886	St. John, Digby and Annapolis, freight and passenger.
*Worcester	129·07	Screw	Wood	1332·56	796·37	New York, 1862	Boston, Halifax and P. E. Island do
*Carroll	64·43	do	do	1372·29	821·97	do 1862	Boston, Halifax, Canso, Pictou and P. E. Island, freight and passenger.
*Bridgewater	54·00	do	do	207·79	125·25	Dumbarton, Glasgow, 1889	Halifax and Bridgewater, freight and passenger.
Totals	835·33			5579·27	2775·62		

SUPPLEMENT FROM DECEMBER 7TH TO 31ST, 1889.

Coila	55·23	Screw	Iron	325·45	161·79	Ayr, Scotland, 1884	Coasting and West Indies, freight.

The above-named boats, * although inspected, are not registered in Canada.

DOUGLAS STEVENS, *Steamboat Inspector.*

STATEMENT of the Number of Steam Vessels added to the Dominion, during the Year ended 31st December, 1889; their Class and Horse-Power; whether of Wood or Iron; their Gross and Registered Tonnage; where Built, and Where and How Employed.

Name of Vessel.	Horse-Power.	Class.	Wood or Iron.	Gross Tonnage.	Registered Tonnage.	Where Built.	Where and How Employed.
Harlaw	71	100 A 1	Iron	457	266	Port Glasgow, N.B.	Passenger and freight, Halifax to Newfoundland.
Halifax	350	None	Steel	1,738	957	Glasgow, N.B.	do Halifax and Boston, U.S.
City of Monticello	220	do	Wood & Iron.	1,033	565	Wilmington, U.S.	do Digby route.
Arbutus		do	Wood	46	31	Yarmouth, N.S.	do Moncton and Dorchester.
Carroll	497	do	do	1,372	822	New York, W.S	do Charlottetown to Boston, U.S.
Worcester	497	do	do	1,332	796	do	do do do
Bridgewater	54	100 A 1	Steel	208	125	Dumbarton, N.B.	do Halifax to Bridgewater.
Yarmouth	260	None.	do	1,432	745	Glasgow, N.B.	do Yarmouth to Boston, U.S.
				7,612	4,307		

C. R. COKER,
Dominion Inspector of Hulls, &c.

STATEMENT of the Number of Steam Vessels added to the Dominion during the Year ended 31st December, 1889; their Class and Horse-Power; whether of Wood or Iron; their Gross and Registered Tonnage; where Built, and Where and How Employed.

Name of Vessel.	Horse-Power.	Class.	Wood or Iron.	Gross Tonnage.	Registered Tonnage.	Where Built.	Where and How Employed.
Aurora	19·37	Paddle	Wood	224·50	141·43	Selkirk, Man	Selkirk and Lake Winnipeg, passenger and freight.
Alma T.	1·20	Screw	do	15·78	10·73	Rat Portage, Ont	Lake of the Woods, tug.
Keewatin	3·33	do	do	41·25	28·05	Keewatin, Ont	do do
Miles	4·80	do	do	63·04	42·87	Selkirk, Man	Lake Winnipeg, fishing tug.
Mountain Belle	·21	do	do	·90	·61	Winnipeg, Man	Banff, Bow River, N.W.T., pleasure yacht.
Richmond	1·63	do	do	14·32	9·74	Thunder Cape, Ont	Lake Superior, fishing tug.
Red River	4·80	do	do	166·47	113·20	Winnipeg, Man	Selkirk and Lake Winnipeg, passenger and freight.
	35·24			526·26	346·73		

EDMUND R. ABELL,
Steamboat Inspector to Manitoba, Keewatin and North-West Territories.

STATEMENT of the Number of Steam Vessels added to the Dominion, during the Year ended 31st December, 1889; their Class and Horse Power; whether of Wood or Iron; their Gross and Registered Tonnage; where Built, and Where and How Employed.

Name of Vessel.	Horse Power.	Class.	Wood or Iron.	Gross Tonnage.	Registered Tonnage.	Where built.	Where and How Employed.
Nanaimo	5·86	Stern wheel.	Wood	70·79	44·61	Nanaimo, B.C	Nanaimo, water junk.
Transit Mills	3·3	Paddle scow	do	102·66	62·78	False Creek, B.C.	Burrard Inlet, freight.
Alert	11·2	Propeller	do	43·81	26·20	Victoria, B.C.	Alert Bay and waters of British Columbia, fishing tug.
Winnifred	6·2	do	do	12·97	7·80	do	Skeena River do do
Delta	6·2	do	do	14·19	8·94	do	Fraser River do do
Agnes	2·2	Twin screw scow	do	15·67	5·64	False Creek, B.C.	Burrard Inlet and North Arm, freight.
Active	50·	Propeller	do	171·74	118·50	Fraser River, B.C	Waters of British Columbia, tug boat.
Lorne	113·	do	do	287·96	159·25	Victoria, B.C.	do do
Islander	271·	Twin screw propeller.	Iron	1495·29	478·00	Glasgow, Scotland	Victoria and Vancouver, freight and passenger.
Tepic	35·7	Propeller	do	70·87	36·78	London, England	Waters of British Columbia, tug boat.
Delaware	22·6	Stern wheel.	Wood	575·20	372·38	Fraser River, B.C	Fraser River, freight and passenger.
	527·26			2861·03	1320·88		

W. A. RUSSELL,
Steamboat Inspector.

Active	50·	Propeller	Wood	171·74	118·50	Fraser River	Tug boat in British Columbia waters.
Islander	271	Twin screw.	Iron	1495·29	478·	Glasgow	Victoria and Vancouver, freight and passenger.
Lorne	113·	Propeller	Wood	287·96	159·25	Victoria	Tug boat in British Columbia waters.
Tepic	35·	do	Iron	70·87	36·78	London	do do
Delaware	22·6	Stern wheel.	Wood	575·20	372·38	Fraser River	Fraser River, freight and passenger. Not inspected yet by me.
	491·6			2601·06	1164·91		

R. COLLISTER,
Hull Inspector.

STATEMENT of Steam Vessels Lost, broken up, or laid up, as unfit for service, in the Dominion during the Year ended 31st December, 1889, and where and how Employed.

WEST ONTARIO AND HURON DIVISION.

Name of Vessel.	Where and How Employed.	Name of Vessel.	Where and How Employed.
Rambler.....	Welland Canal, tug.	Annie Watt	Georgian Bay, tug.
F. A. Folger.....	Detroit River, tug.	Sam Perry.....	Welland Canal, tug.

W. J. MENEILLEY, O. P. ST. JOHN, } *Steamboat Inspectors.*

WEST ONTARIO DIVISION.

Nil..	Nil.	Nil.	Nil.

THOS. HARBOTTLE, *Hull Inspector.*

EAST ONTARIO DIVISION.

Whistle Wing... .	Tug boat on Peterboro' waters.	Dora....	Tug boat on Peterboro' waters.

EDWARD ADAMS, *Steamboat Inspector.*

EAST ONTARIO DIVISION.

No passenger steamers.

THOMAS DONNELLY, *Hull Inspector.*

MONTREAL DIVISION.

Carillon.....	Ottawa River, towing.	New York.	St. Lawrence River, towing.
Zebra	do do	Chaudiére...	Ottawa River, towing.

JOHN BURGESS, *Steamboat Inspector.*

QUEBEC DIVISION.

Laval.....	Tug at Three Rivers.	Castor.....	Tug, Quebec Harbor.
Berseameste	do Bersimits River.	Maggie H.....	Pleasure yacht, Campbellton.
St. Catherine.....	do Quebec Harbor.	L. N. G.....	Tug, Quebec Harbor.
Montarville.....	Paddle ferrry, Montreal and Island St. Hélène.		

PIERRE D. BRUNELLE, *Hull Inspector.*
JOS. SAMSON, *Boiler and Machinery Inspector.*

STATEMENT of Steam Vessels Lost, broken up or laid up, as unfit for service, in the Dominion, &c.—*Concluded.*

MARITIME PROVINCES DIVISION.

Name of Vessel.	Where and How Employed.	Name of Vessel.	Where and How Employed.
Henry Aitken	Tug boat, Charlottetown, P.E.I.	Andover	Passenger, Newcastle, N.B.
Sarah H.....	do Fredericton, N.B.	St. Patrick.....	Tug, Chatham, N.B.

DOUGLAS STEVENS, *Steamboat Inspector.*

Nil.....		Nil.....	

C. R. COKER,

BRITISH COLUMBIA DIVISION.

Rustler.....	Waters of British Columbia coasting.	*Dolphin.....	Steam sealing schooner.
*Anna Beck.....	Steam sealing schooner.	Brunette.....	Fraser River, fishing tug.
*Grace.....	do do	Skizzy.....	Kamloops Lake, freight and passenger.

*These vessels were seized by United States Government, and sold at Port Townsend, United States, 26th March, 1889, for capturing seals in Alaskian waters.

W. A. RUSSELL, *Steamboat Inspector.*

*Anna Beck.	Sealing steam schooner .	*Dolphin.....	Sealing steam schooner.
*Grace.....	do do		

*These three schooners were seized by the United States Government, in Behring Sea and sold.

R. COLLISTER, *Hull Inspector.*

IN THE MANITOBA, KEEWATIN AND NORTH-WEST TERRITORIES DIVISION.

Fleetwing.....	Lake of the Woods, Ontario, tug.		

EDMUND R. ABELL, *Steamboat Inspector*
For Manitoba, Keewatin and the North-West Territories.

List of Certificates of Competency granted to Engineers for 1889.

ENGINEERS.

No. of Certificate.	Date of Certificate.	Name.	Grade.	Address.	Where Examination was Passed.	Fee.
						$ cts.
882	Jan. 7.	Thomas Head	3rd Class	Windsor, Ont		5 00
883	do 7.	Neil Maitland	4th do	Sarnia, Ont	Toronto	5 00
884	do 7.	Alexander McNiven	3rd do	Nanaimo, B.C.	Victoria, B.C.	5 00
885	do 7.	Chas. E. Eastland	2nd Class, valid in Great Britain.	Victoria, B.C	do	5 00
886	do 7.	Samuel Hallander	4th Class	Moodyville, B.C.	do	5 00
887	do 7.	Edward Stephenson	4th do	Victoria, B.C	do	5 00
888	do 7.	Henry Ed. Joliffe	4th do	St. Catharines, Ont	Toronto	5 00
889	do 5.	Thomas A. Kennedy	4th do	Beacon Hill, Victoria, B.C.	Victoria, B.C.	5 00
890	do 12.	Samuel S. Malcolmson	1st Class, valid in Great Britain.	Toronto	Toronto	1 00
891	do 28.	Samuel Taylor Wilson.	do	do	do	5 00
892	do 28.	Michael D. Tetro	4th Class	Kingston	do	5 00
893	do 28.	William Rogers	3rd do	New Westminster, B.C	Victoria, B.C.	5 00
894	do 28.	Nicola Protormastro	4th do	Village of Bienville, Levis, Que.	Quebec	5 00
895	do 28.	Matthew H. Chisholm.	4th do	Toronto	Toronto	5 00
896	do 28.	John McGraw	3rd do	Victoria	Victoria, B.C.	5 00
897	do 28.	Charles Mellon	4th do	Point Edward, Ont	Toronto	5 00
898	do 28.	John Huff	2nd do	Brighton, Ont	do	5 00
899	Mar. 1.	James Quinn	4th do	Port Dalhousie, Ont.	do	5 00
900	do 1.	Thomas A. Russell	4th do	Owen Sound, Ont.	do	5 00
901	do 1.	Chas. S. Cheetham	4th do	Toronto	do	5 00
902	do 1.	Frank Cleland	4th do	Collingwood, Ont.	do	5 00
903	do 1.	Alexander McLeod	2nd do	Hantsport, N.S.	Halifax	5 00
904	do 1.	Thomas Marriott	2nd do	Aldershott, Ont	Toronto	5 00
905	do 1.	William Anderson	3rd do	Port Colborne, Ont	(Exchanged)	5 00
906	do 2.	D. J. Murray	1st Class, valid in Great Britain.	Halifax, N.S.	Halifax	5 00
907	do 2.	Thomas Abernethy	3rd Class	Sarnia, Ont	Sarnia	5 00
908	do 2.	John Lee	3rd do	Wallaceburg, Ont	do	5 00
909	do 2.	Joseph P. Grimes	3rd do	Sarnia	do	5 00
910	do 2.	Thomas Brown	3rd do	Owen Sound	Toronto	5 00
911	do 2.	William Thomson	3rd do	Côte des Neiges, Que.	Montreal	5 00

LIST of Certificates of Competency granted to Engineers—*Continued.*

No. of Certificate.	Date of Certificate.	Name.	Grade.	Address.	Where Examination was Passed.	Fee.
	1889.					$ cts.
912	Mar. 2.	Wm. E. Simpson	3rd Class.	Collingwood	Toronto	5 00
913	do 2.	Daniel Donohue	3rd do	Toronto	do	5 00
914	do 2.	Théophile Dion	3rd do	St. Romuald, Que	(Exchanged)	5 00
915	do 2.	Joseph A. Kerby	4th do	Dresden, Ont.	Sarnia	5 00
916	do 2.	George Charlton	4th do	Sarnia, Ont	do	5 00
917	do 2.	James Noble	4th do	Midland, Ont	Toronto	5 00
918	do 8.	Dominique Leclaire	3rd do	Lachine, Que.	(Exchanged)	5 00
919	April 20.	Randolph Crosby	2nd do	Yarmouth, N.S	Halifax	5 00
920	do 20.	Thomas V. Callaghan	4th do	Kingston, Ont.	Kingston	5 00
921	do 20.	George Fleming.	4th do	do	Toronto	5 00
922	do 20.	Edwin G. Axworthy	4th do	Montague Place, Toronto.	do	5 00
923	do 20.	John McFarlane	4th do	Red Bay, Bruce, Ont.	do	5 00
924	do 20.	Marcus Hoyer	3rd do	Toronto	(Exchanged)	5 00
925	do 20.	Alexander Munro	3rd do	Glencoe, Ont.	do	5 00
926	do 23.	Michael Rourke	Permit.	Walkerville, Ont.		2 00
927	May 4.	Robert Sloan	3rd Class	Kingston, Ont.	(Exchanged)	5 00
928	May 7.	J. W. Edrige	3rd do	Selkirk, Man.	(Exchanged)	5 00
929	do 4.	J. D. Fullerton	Permit.	Pictou, N.S		2 00
930	do 25.	William T. Minor	do	Belleville, Ont.		2 00
931	do 25.	George W. Payne	2nd Class	North Sydney, C.B.	Halifax	5 00
932	do 28.	John McCullough	3rd do	Port Colborne	(Exchanged)	5 00
933	do 28.	George Filteau	3rd do	South Sydney, C.B.	do	5 00
934	do 28.	Duncan F. McDonald	3rd do	Port Lambton, Ont.	do	5 00
935	do 28.	Daniel Dunoon	3rd do	Owen Sound.	do	5 00
936	do 28.	James L. Locke	2nd do	Montreal.	do	5 00
937	do 28.	Wm Daly	2nd do	Petrolia, Ont.	do	1 00
938	June 3.	A. T. Lowe	Permit.	Port Carling, Muskoka		2 00
939	do 6.	Cyrus A. Dean	3rd Class.	Fort Erie, Ont.	Toronto	5 00
940	do 6.	Charles A. Farrar	3rd do	Meaford, Ont.	do	5 00
941	do 12.	Cyrus S. Dean	2nd do	Fort Erie, Ont.	(Exchanged)	1 00
942	do 12.	James Clarke	3rd do	St. John, N.B.	do	5 00

List of Certificates of Competency granted to Engineers—*Concluded.*

No. of Certificate.	Date of Certificate.	Name.	Grade.	Address.	Where Examination was Passed.	Fee.
	1889.					$ cts.
943	June 18..	Farquhar McRae.....	Permit.....	Beaverton, Ont.	.....	2 00
944	do 18..	T. H. Sheffield.....	do	Sutton, West, Ont....	.....	2 00
945	July 5..	Norman Neff.....	4th Class.....	Humberstone, Ont....	Toronto	5 00
946	do 5..	John Thornton.....	Permit.....	Hamilton, Ont.....	do	2 00
947	do 5..	Norman Neff.....	do	Humberstone, Ont....	do	2 00
948	do 5..	John Senecal.....	do	Grenadier Island, Ont.	Kingston	2 00
949	do 5..	George H. Shutlif.....	do	Gananoque, Ont.....	do	2 00
950	do 22..	Thomas O'Marra.....	do	Lombardy, Ont.....	do	2 00
951	do 22..	E. J. Riley	4th Class.....	Owen Sound, Ont.....	Toronto	5 00
952	do 22..	James Coghill	Permit.....	Toronto.....	do	2 00
953	do 31..	P. J. Fahey	2nd Class.....	Newboro', Leeds, Ont.	do	5 00
954	do 31..	Martin Morrison.....	3rd do	Chippawa, Ont.	do	5 00
955	Aug. 3..	Alfred Johnroe.....	Permit.....	Lindsay, Ont.	Kingston	2 00
956	do 3..	Martin L. Crandell....	do	Port Perry, Ont.....	do	2 00
957	do 10..	William W. Savage...	do	Toronto.....	Toronto	2 00
958	do 16..	George H. Shutlif.....	do	Gananoque, Ont.....	Kingston	2 00
959	do 26..	Matthew Russell.....	3rd Class..	Newcastle, N.B	Halifax.....	5 00
960	do 30..	John McRae.....	3rd do	Meaford, Ont	(Exchanged)....	5 00
961	do 30..	John Downey.....	3nd do	Point Edward, Ont...	Toronto	5 00
962	Sept. 13..	Frederick Rutherford..	Permit.....	Midland, Ont.....	.....	2 00
963	do 17..	A. F. Fragier.....	3rd Class.....	Arichat, Cape Breton, N.S.	Halifax.....	.. .
964	Oct. 18..	William McKenzie...	3rd do	Vancouver, B.C.....	(Exchanged)....	5 00
965	do 18..	T. B. Campbell.....	4th do	Brampton, Ont.....	Toronto	5 00
966	do 30 .	Henry Holt.....	3rd do	West Selkirk.....	Selkirk, Man....	5 00
967	do 30..	Thomas Stavely.....	3rd do	Montreal, P.Q.....	(Exchanged)....	5 00
968	do 30..	J. T. Martin.....	4th do	Victoria, B.C.... ...	Victoria	5 00
969	do 30..	R. H. Hornbrook.....	2nd do valid in Great Britain.	. ...	Victoria, B.C...	5 00
970	Nov. 19..	Joseph Johnson.....	4th Class.....	Victorio, B.C.....	do ...	5 00
971	do 20..	P. S. Roe..	Permit..	Thurso, Que.....	.....	2 00

APPENDIX No. 2.

STATEMENT of Wrecks and Casualties reported as having occurred to British, Canadian and Foreign Sea-going Vessels, in Canadian waters, and to Canadian Sea-going Vessels in other waters, for the eleven months ended 30th November, 1889.

Date of Casualty.	Name of Vessel.	Age.	Port of Registry.	Rig.	Register Tonnage.	Port sailed from. — Port bound to.	Place where Casualty happened.	Nature of Casualty.	Cause of Casualty.	Lives Lost.	Total or Partial Loss.	Amount.
1889.												$
Jan. 9	Alice M. Claridge.	8	Windsor, N.S.	Barque.	1129	London to New York	W. lon. 72°; N. lat. 37° 23′.	Damaged.	Gale		Partial.	244
do 27	Antoinette	14	Yarmouth.	Ship	1118	Montevideo to Boston.	Tuckermuck Island, U.S.A.	Stranding	do		Total	14,000
do 30	Annie.	6	St. John	Schooner.	7	On fishing grounds	3 miles off Poplogan, Charlotte Co., N.B.	Collision with the Freeman Colgate.			do	500
Mar. 25	Arthur	20	Yarmouth.	Brigantine.	123	Barbados to Yarmouth	N. lat. 43° 20′; W. lon. 66° 35′.	Damaged.	Gale		Partial.	1,000
April 9	Aspatogon	12	do	Barque.	861	New York to Liverpool	N. lat. 37° 50′; W. lon. 68° 50′.	do	do		do	4,000 cargo 500
Jan. 3	Anglo-India	12	St. John, N.B.	Ship	1549	Shanghai to Phillipine Islands.	Coast of Formosa.	Stranding	Unknown.	14 sup.	Total	40,000
Feb. 12	Artisan	8	do	Bark.	1109	Saigon to Iloilo.	China Seas.	do	Carelessness			4,000
Mar. 15	Auriga	5	Charlottetown	do	885	Rio Janeiro to St. John, N.B.	Atlantic Ocean.	Collision.	Unknown str.		Damage slight.	
April —	Active.	4	Victoria, B.C.	Schooner.	42	Victoria to Clayoquot Sound.	30 miles off Clayoquot Sound.	Foundered.		33	Total	5,500 cargo 3,500
do 22	Alice Louise.	5	Barrington, N.S.	do	93	Halifax to Fortune Bay, Nfld.	Fortune Point.	Stranding	Bad steering		do	4,200

STATEMENT of Wrecks and Casualties to Sea-going Vessels.—*Continued.*

Date of Casualty.	Name of Vessel.	Age.	Port of Registry.	Rig.	Register Tonnage.	Port sailed from. — Port bound to.	Place where Casualty happened.	Nature of Casualty.	Cause of Casualty.	Lives Lost.	Total or Partial Loss.	Amount.
1889.												$
Mar. 6	Alice Cooper	17	Windsor, N.S.	Bark	863	Newcastle to Buenos Ayres.	Newcastle, England	Struck stone pier.	Bad steering	....	Slight	100
do 5	Anna B	8	St. John	Schooner	16	Rose Blanche Fishing	St. Paul's Island, Nova Scotia.	Run into by another str. while at anchor.	....	....	Total	400
April 20	Athena	1	Windsor, N.S.	Barquentine	687	Barbados to Lunenburg	N. lat. 40° 30′; W. lon. 43° 20′.	Damaged	Gale	....	Partial	500
Feb. 25	Antwerp	15	do	Bark	15	London to New York	Lat. 41°; lon. 50° 25′.	do	do	....	do	300
June 5	Anna	33	Foreign	Barque	828	Norway to Quebec	Off Cape Rosier Light-house.	Stranding	Tide and sea	....	do	9,000
May 10	Aurora	20	Belfast	Brig	211	Lorne to Newcastle	N. lat. 31° 4′; W. lon. 30° 24′.	Abandoned, leaky.	Gales	....	Total	2,500
Jan. 11	Artos	7	St. John	Brigantine	313	Rosario to Buenos Ayres.	River Platte, No. 4 Buoy.	Collision	Pilot seemed confused.	....	Partial	1,782
July 10	Arlington	25	Norway	Barquentine	627	Houfleur to Chatham	Miramichi Bay	Stranding	Shallow water.	....	No damage	....
May 21	Alice	12	Windsor	Brigantine	137	Boston to Cayenne	Lat. 39° 13′; long. 68°.	Damaged	Heavy weather	....	Partial	3,000
Sept. 9	Alberta	1	do	Schooner	610	Windsor to New York.	Between Cape Cod and Block Island.	do	Gale	....	Slight	50
Aug. 23	Anglo	16	Lunenburg	Brigantine	298	Trinidad to Boston	N. Lat. 28° 56′; W. long. 71° 28′.	do	Hurricane	....	Total	8,000
do 3	Alpha	21	do	do	220	Demerara to Laguna	W. Lat. 17° 20′; W. long. 91° 20′.	Stranding	do	....	do	4,000
Sept. 8	Avis	7	St. John, N.B.	Schooner	124	St. John to New York.	Long Island Sound	Collision	do	....	Partial	3,000

do	9	Adelone	4	do	do	193	Norfolk to St. John	N. Lat. 38° 48′; long. 72° 55′.	Damaged	Heavy Gale	1	do		cargo	1,800 1,100
Oct.	8	A. J. Franklin	35	Chatham, N.B	do	53	Pictou, N.S., to Chatham, N.B.	West Cape P. E. I	Foundered	Unknown		Total		cargo	1,100 30
Jan.	24	Bartie Pierce	19	Gloucester, U.S.	do	90	St. Pierre, Miquelon to Gloucester.	Off Cape Canso	Stranding	Gale		do		cargo	3,000 2,000
Mar.	14	British Pearl	26	Guysboro'	do	77	Port Hawkesbury at Anchor.	Port Hawkesbury	do	do		Slight			100
do	30	Byron M	7	Windsor N.S.	do	128	St. Kitts to New York	8 miles S. E. Sandy Hook Lightship.	Damaged	Gales		Partial			4,000
July	1	Bucco	23	St. John	do	145	Fall River, Mass., to St. John, N.B.	Rhode Island, U.S.	Stranding	Fog		Total			1,000
June	24	Borghild	23	Norwegian	Barque	590	Miramichi, N.B., to White Haven.	Magdalen Islands	do	Fog and currents.		do			1,000
April	18	Boroma	10	Chatham, N.B	do	793	Liverpool to Richibucto	Cape Ballard	do	Dense fog		do			4,000
June	13	Brit'h America	20	Windsor	Ship	1050	Dunkirk to Hantsport	Hantsport, undergoing repairs.	Listed			Partial			2,500
do	3	Bessie Morris	8	Liverpool, G.B	Steamship	1119	Montreal to Sydney	Aspy Say	Stranding	Currents		do		Unknown.	
July	2	Brenton	12	Yarmouth	Schooner	70	Rockland, Me., to Parrsboro'.	Block Rock, Bay of Fundy.	do	Fog		do			350
June	4	Beaver	17	Quebec	do	99	Grand Entry, Magdalen Islands to Grindstone Island.	All Right Island	do	Error in chart		do			3,000
July	20	Bessie	19	Halifax	do	33	Halifax to Chester	Ketch Harbor	Wrecked	Fog		Total			600
Sept.	11	Byron M	7	Windsor, N.S.	do	128	San Domingo to New York.	Deleware Breakwater	Stranding	Gale		Partial			3,500
Oct.	23	Busiris	15	St. John	do	143	St. Mary's, Ga., to St. John, N.B.	Carolina Coast	Wrecked	Hurricane		Total		cargo	6,000 3,200
Jan.	11	Christina	14	Halifax	Brigantine	153	——— to New York.	Near South Carolina	Wrecked	Gale		Total			4,000
Feb.	4	Chignecto	15	Windsor, N.S.	Bark	1032	Ghent to New York	In the Downs, G.B.	Damaged	Gales		Partial			2,500
Jan.	13	Christina	7	Maitland, N.S.	Barque	1056	Callas to Labos, De et fuera.	Labos de et fuera	Burned	Set on fire by one of crew.		Total			
April	23	Ceto	1/6	Lunenburg	Schooner	95	Halifax to Western Banks.	Boat shoal, mouth of Canso Harbor.	Stranding	Beating too near shoal.		Partial			300

STATEMENT of Wrecks and Casualties to Sea-going Vessels—*Continued.*

Date of Casualty.	Name of Vessel.	Age.	Port of Registry.	Rig.	Register Tonnage.	Port sailed from. — Port bound to.	Place where Casualty happened.	Nature of Casualty.	Cause of Casualty.	Lives Lost.	Total or Partial Loss.	Amount.
1889.												$
April 7	Clifton	6	Windsor, N.S.	Schooner	473	Demerara to New York	Lat. 39°15′, long. 73°30′	Damaged.	Bad weather.		Partial.	500
May 22	Cynthia	8	Glasgow	do	1410	Glasgow to Montreal	Long Point, St. Lawrence.	Collision with Polynesian.		7	do	100,000
April 23	Carrick	12	St. John	Brig	314	Barbadoes	Carlisle Bay	Collision	Anchor fouled.		do	500
Aug. 2	Crestline	8	do	Schooner	117	Stonington to Quaco, N.B.	Off coast of Maine, U.S	Stranding.	Fog		do	4,000
Oct. 26	Carlton Bell	3	Booth Bay, Me	do	132	Fishing Banks to Booth Bay Harbor.	Bull Rock, N.S.	do	Thick weather.		do	1,500 cargo 1,500
Sept. 18	Clifton	11	Windsor, N.S.	do	473	Windsor to New York.	90 miles E.N.E. of Cape Cod.	Lost sails, etc.	Gale		do	400
Nov. 3	Capella	27	Halifax	do	30	Wallace to Halifax	Strait of Canso	Collision with another str.			do	200 cargo 200
Oct. 23	C. Y. Gregory	6	St. John, N.B.	do	88	New York to St. John.	15 m. W. of Mt. Desert	Collision with the Emma L. Gregory.			Slight	100
Mar. 30	Dunrobin	14	do	do	55	Rockland, Maine, to Quaco, N.B.	Port George, N.S.	Stranding	Became unmanageable.		Total	1,000
June 26	Dauntless	18	Quebec	Tug	9	Quebec	Opposite Grosse Isle	Screw damaged.	Carelessness		Partial.	200
Sept. 19	Dolphin	29	Guysboro'	Schooner	31	Pictou to Guysboro'	Strait of Canso	Collision with str. Menlo.	do		do	200
Nov. 16	Ethel & Addie	7	Portland, Me.	do	86	Portland, Maine, to Georgetown, P.E.I.	1 mile from White Island.	Damaged.	Gale		Slight	100
do 8	Elizabeth Ann	23	Pictou	do	174	Sydney to Halifax	6 miles from Halifax	Stranding	Wind		Partial.	300
Feb. 19	Evangeline	10	Weymouth, N.S.	do	95	Port Acadie to Barbadoes, W.I.	25 miles S. W. of Brier Island, N.S.	Damaged.	Leak		Slight	

April 7	Emort	10	Port Hawkesbury.	do	110	Ponce, P.R., to Boston.	Lat. 36° 16′; long. 69° 10′.	Foundered	Gales	Total	2,500	
Jan. 7	Endrick	8	St. John	Brigantine	313	St. John, N.B., to Liverpool, G.B.	Liverpool, G.B	Collision with St'm'r. "Albatross."		Partial.	400	
Mar. 23	Enchanter	37	Liverpool	Barque	461	Sydney, N.S.W., to Panama.	Lat. 32°; W. long. 105°.	Foundering	Heavy gale	Total	12,000	cargo 1,500
April 9	Ethel	21	St. John	Schooner	78	Harvey, N.B., to Rockland, Maine.	Bliss Island, N.B.	Stranding	Error in judgment.	Slight	150	
June 20	Emile	29	St. Malo	Barque	151	St. Pierre to Shediac, N.B.	Amherst, Magdalen Island.	do	Fog	Total	2,850	
July 2	Emma Proctor	8	Port Hawkesbury.	Schooner	40	Grand Narrows to Wallace.	Point Tupper	do	Tides	Slight	50	
May 25	E. Walsh	17	St. John	do	143	St. John, N.B., to Philadelphia.	Delaware River	do	Fog	do	150	
do 21	F. & E. Givarr	3	Moncton	do	109	Boston to St. John	Off Grand Manan	Collision with "H T Townsend."	do	Partial	1,000	
June 28	Flora Dell	5	Halifax	do	62	Halifax to Canso	Off Cape Canso Island, N.S.	Stranding	do	do	1,000	
do 25	Falmouth	13	Windsor, N.S.	Brigantine	501	Windsor to New York.	Nantucket Shoals	do		do	100	
July 7	Faerder	31	Norwegian	Barque	398	Newport, S.W., to Halifax.	Sable Island			Total	5,000	cargo 5,100
Aug. 4	Festine Lente.	8	Shelburne, N.S.	Schooner	80	Shelburne to Halifax	Bryon Island	Stranding	Currents	do	4,000	cargo 1,000
April 7	Flora P. Stafford	6	Windsor	Ship	1352	Singapore to New York	Cape Hatteras	Damaged	Heavy gale	Partial	2,000	
Oct. 19	Flora Dell	10	Halifax	Schooner	62	Pleasant Harbor to Georgetown, P.E.I.	Petit de Grat, N.S.	Stranding	Error in chart.	do		
Oct. 19	Flora Dell	10	Halifax	do	62	Pleasant Harbor to Georgetown, P.E.I.	Petit de Grant, N.S.	Stranding	Error in chart.	Partial	Uuknown	
May 30	Genesta	new	Lunenburg	do	99	Halifax to Fishing Grounds.	Chedebucto Bay	Damaged	Gale	Very slight	60	
June 1	Gertie May	7	Portland, U.S.	do	97	Portland, U.S., to Fishing Grounds.	Entrance of Canso Harbour.	do	do	Slight	175	
do 26	Grey Parrot	5	St. John, N.B.	do	97	St. John to Boston	Matinicus Rock, Maine	Burned.	Lime caught on fire.	Total	3,000	cargo 900

STATEMENT of Wrecks and Casualties to Sea-going Vessels—*Continued.*

Date of Casualty.	Name of Vessel.	Age.	Port of Registry.	Rig.	Register Tonnage.	Port sailed from. — Port bound to.	Place where Casualty happened.	Nature of Casualty.	Cause of Casualty.	Lives Lost.	Total or Partial Loss.	Amount.
1889.												$
July 10	Granada.....	32	American	Schooner ...	57	Port Hawkesbury to St. Pierre.	St. Peter's Bay	Stranding	Sunken ledge..	....	Partial .	100
Sept. 2	Glad Tidings..	11	St. John.....	do ...	75	Fall River to St. John.	Near Cross Rip Light-ship, U.S.A.	Collision with an unknown vessel.	....	....	Slight...	100
July 1	Geo. Killam..	...	Digby, N.S...	do ...	36	Beaver Harbor to Rockland.	West Quoddy...	Collision	Fog.....	....	Partial..	500
Nov. 17	Glide	9	Windsor, N.S.	do ...	66	Canning to Boston....	Pereaux Beach, N.S..	Burned.....	From cabin stove.	....	Total...	1,600
												cargo 400
Jan. 10	Helen Marion.	17	Yarmouth, N.S.	Brigantine..	395	Liverpool to Rosario..	N. lat. 48° 51′; W. long. 10° 12′.	Foundering...	Bad weather..	....	do ...	8,000
												cargo 1,500
May 23	Hudson.....	16	New Carlisle..	Schooner ...	99	New Richmond to Barbadoes.	Near New Richmond, P.R.	Sprung a leak.	do ..	....	Slight..	100
do 7	Hahnemann ..	28	Newcastle	Barque.....	1313	Shields to Quebec. ..	Red Island Reef.....	Stranding	Mismanagement of Pilot.	....	Partial .	Unknown.
July 18	Hannah Eldridge.	...	Barrington ...	Schooner ...	57	Boston to Barrington..	Half Bald Tusket.....	do	Current and fog.	....	do ..	1,200
												cargo 2,000
Sept 17	Hale Todd....	6	St. John.....	do ...	99	Boston to Advocate...	Matinicus, Maine....	Collision with an unknown vessel and also with the "Clifton."	.....	....	Total...	3,000
March 5	Holmes	7	St. John, N.B.	do ...	121	St. John to New York.	Long Island, U.S.A...	Stranding	Heavy weather	....	Partial .	3,500
do 21	Helena.....	....	Halifax ...	do ...	16	Lower Prospect, Fishing.	Jacobs' Rock., N.S....	do	.....	....	Total...	600
July 9	Hypatia.. ...	22	St. John.....	Bark.....	730	Pensacola to Buenos Ayres.	N. lat. 24° 30′; W. long. 86° 30′.	Leaked; condemned.	Heavy weather	....	do ..	6,000

Sept. 1	Howard A. Turner.	53	do	do	505	Hillsboro' to Dublin	Grand Manan, N.B.	Stranding	Fog			5,000
Aug. 20	Hawthorne	15	do	do	621	New York to Port Natal.	Port Natal	do	Gale		Total	10,000
	Harold	2	Glasgow	Steamer	536	Boston to United Kingdom.	Barrington, N.S.	do	Fog		Slight	50
June 23	Isaac Burpee	9	St. John, N.B.	Schooner	180	Norfolk to St. John	Atlantic	Damaged	Gale		Partial	4,000
Sept. 12	Isaac A. Chapman.	14	Gloucester	do	81	Tignish, Fishing	Curl Reef, Magdalen Isles.	Stranding	Smoke		Slight	100
do 9	Iolanthe	6	Windsor, N.S.	do	393	Wilmington to Buenos Ayres.	Lat. 36° 20′; long. 71° 20′.	Damaged	Gales		Partial	2,500
do 27	Ilda		Port Hawkesbury	do	26	Pictou to Pugwash	Pugwash	Run into by a steamer.			Slight	125
Feb. 5	John Holmes	19	Windsor, N.S.	Bark	918	Towey to New York	Off New York	Damaged	Gale		Partial	250
April 23	Joseph	12	Maitland, N.S.	Ship	1542	Rio Janeiro to St. John	Grand Manan, N.B.	Stranding	Fog		do	8,000
May 1	John Somes	27	Portland, N.S.	Schooner	62	Georgetown, P.E.I., to Fishing Banks.	Off Port Hood, N.S.	do	do		Total	1,000 cargo 700
Feb. 22	Josie Troop	8	St. John, N.B.	Bark	1099	London to Philadelphia	Carolina, U.S.	do	Gale	11	Total	45,000
May 26	Jane E. Hala	19	Halifax	Brigantine	107	Ponce, P.R., to Halifax	Atlantic	Damaged	do		Partial	Unknown.
June 8	Julia S	11	St. John	Schooner	82	St. John to Boston, Mass.	Moosepeck, Me., U.S.A	Stranding	Error in Compass.		do	1,600 cargo 1,200
do 5	James Dwyer	14	Halifax	do	99	Halifax to Grand Narrows.	Cape Roser, C.B.	do	Fog		Total	312
Aug. 3	John Millard	8	Barrington	do	68	Cow Bay to Sheet Harbour.	St. Andrew's Channel, N.S.	do	do		Partial	300
July 15	Jeanne D'Arc		French	do	52	Halifax to New London, P.E.I.	White Head, N.S.	do	do		Total	1,500
Sept. 19	J. L. Cotter	17	St. John, N.B.	do	139	St. John to New York.	76 miles S.E. of Matinicus.	Wrecked	Heavy Gale	2	do	1,500 cargo 1,000
Oct. 1	J. P. Blake	14	Parrsboro'	do	115	Parrsboro' to Salem	Maine Coast, U.S.	Stranding	Struck ledge of rock.		do	1,500
Sept. 19	John McLaggan.	2	Chatham	do	238	New York to Loguna.	Gulf of Mexico	Foundered	Unknown	7	do	12,000

STATEMENT of Wrecks and Casualties to Sea-going Vessels—*Continued.*

Date of Casualty.	Name of Vessel.	Age.	Port of Registry.	Rig.	Register Tonnage.	Port sailed from. — Port bound to.	Place where Casualty happened.	Nature of Casualty.	Cause of Casualty.	Lives Lost.	Total or Partial Loss.	Amount.
1889.												$
July 3	Kailuk	6	San Francisco.	Brigantine.	221	Nanaimo to Port Townsend.	Georgia Strait	Damaged			Partial.	1,111
Sept. 5	Kinburn	14	Yarmouth	Ship.	1198	Buenos Ayres to Quebec.	Port de Monts, St. Lawrence.	Stranding	Fogs		Total.	20,000
Oct. 25	Kestrel	12	Halifax	Schooner.	70	Cow Bay to Halifax.	Louisburg Harbor.	Foundered	Struck a rock		do	2,000
Jan. 6	LillianB.Jones	35	Shelburne	Barquentine	273	East Port, Me	Petit Manan Island, N.S.	Stranding	Gale		Partial.	7,000 cargo 800
do 15	Libbie H.	14	Halifax	Brigantine.	361	Halifax to Buenos Ayres.	W. Lat. 36° 20′, W. Long. 53° 30′.	Sprung a leak.	Gales	2	Total.	10,000 cargo 12,000
May 25	Lida & Lizzie	24	Arichat	Schooner.	56	Port Hawkesbury to Fishing Grounds.	Cheticamp Island	Damaged	Squall		Partial.	150
Sept. 9	Laurissa	new	St. John	do	122	New York to Satilla.	W. Lat. 37°, W. Long. 73° 46′.	do	Gales		do	4,000
May 21	Maud W.	8	St. John.	Schooner.	82	Boston to Quaco, N.B.	Cutler, Me	Stranding	Fog		Total.	2,500
do 20	Magellan Cloud.	10	Shelburne	do	89	Halifax to Canso.	Off Cape Canso	do	Patent log in error.		do	3,500
July 25	Maude		Victoria	do	11	Vancouver to Port Townsend.	San Juan Isle, B.C.	do	Fog and tides			
June 28	Meteor	40	Liverpool, N.S	do	37	Sydney to Halifax	Cape Canso	do	Fog		Partial.	50 cargo 75
July 20	Maud & Bessie	11	St. John	do	75	Boston to Joggins, N.S.	Maccan River, N.S	do			Total.	500
Mar. 26	Margaret L.	4	Sydney, C.B.	do	169	Trinidad to Boston	Lat. 35° 18′ ; lon. 75° 34′	Foundered	Hurricane		do	6,000
June 23	M. B. Daly	4	Port Medway.	Brigantine.	134	Ponce, P.R., to Halifax	W. lat. 34° 50′ ; W. long. 67° 20′.	Dismasted	do		Partial.	2,970

Aug.	4	Montreal	0	Liverpool	Steamship	2160	Montreal to Liverpool.	Belle Isle Island	Stranding	Fog	Total	150,000
May	20	Mary C	18	St. John	Schooner	103	Dorchester to Moncton	Moncton	Struck wharf	Tide	Slight	50
June	20	Maud C	16	St. John, N.B.	do	194	St. John to New York	60 miles E. of Cape Ann	Burned	Leak and lime	Total	3,000 cargo 1,470
May	23	Moselle	11	Chatham	Bk	512	Buenos Ayres to Barbadoes.	Coast of Brazil	Stranding		do	10,000
Oct.	2	Minnie Swift	13	Maitland	Ship	1150	Greenock to Miramichi	45 miles W. of St. Pierre Miquelon.	Collision with SS. "Geographique."	6	do	25,000
Sept.	15	Mayflower	21	St. John	Schooner	70	River Herbert to Boston.	10 miles from St. Martin's, N.B.	Sprung a leak.	Heavy seas	Partial	500
Nov.	13	Mary Alice	17	Halifax	do	46	Parrsboro' to St. John, N.B.	East of Quaco	Stranding	Chain parted	Total	650
June	27	New Era	18	Charlotteto'n, P.E.I.	Bark	314	Pictou, N.S., to St. John, N.B.	Cape Negro, N.S.	Stranding	Fog	Total	4,000
Sept.	19	Neva	11	Halifax	Schooner	190	Bayfield to CapeGeorge	Cape George Break'ter	do	Squall	do	800
do	4	Ottilie	40	German	Bk	567	St. Vincent to Chatham	Near Escuminac Light	do	Smoke	No loss	
Mar.	26	Oliver A. O'Mullin.	19	Parrsboro'	Schooner	148	Cow Bay to Halifax	Off Jeddore, N.S.	Foundering	Ice	Total	1,500 cargo 375
Oct.	13	Ontario	13	Windsor, N.S.	Bk	824	Buenos Ayres to New York.	40 miles from Black Island, N.S.	Damaged	Gale	Slight	200
Jan.	14	Piskataqua		do	Bk	600	Buenos Ayres to Barbadoes.	Lat. 30° 20′, W. Lon. 71°.	do	Hurricane	Partial	2,500
May	22	Polynesian	17	Glasgow	Steamship		Montreal to Liverpool	Long Point, St. Lawrence.	Collision with the "Cynthia."		Serious wreck.	
Feb.	1	Resolver	16	Sackville	Brigantine	142	Port Hawkesbury to Conway, N.B.	Port Mulgrave	Stranding	Gale	No damage.	
do	—	Rhine	15	Windsor, N.S.	Ship	1093	Ghent to New York	Terneuse Harbour	Burnt		Total	20,000
June	13	Resultado	18	Demerara	Brigantine	178	Liverpool to Demerara	Lat. 39°-38, Lon. 62°-30	Sprung a leak.	Ware and tare	Partial	500 cargo 100
May	20	Ruby	19	Dublin	Barque	878	Limerick to Quebec	Island of Orleans	Stranding	Bateau at anchor showing side lights.	Partial wreck.	

STATEMENT of Wrecks and Casualties to Sea-going Vessels—*Continued.*

Date of Casualty.	Name of Vessel.	Age.	Port of Registry.	Rig.	Register Tonnage.	Port sailed from. — Port bound to.	Place where Casualty happened.	Nature of Casualty.	Cause of Casualty.	Lives Lost.	Total or Partial Loss.	Amount.
1889.												$
June 25	Royal Home	7	Charlotteto'n, P.E.I.	Schooner	89	South Bar, C.B., to Charlottetown, P.E.I	Cape Breton	Damaged	Squall		Partial	1,000
July 14	Rapid Transit	7	Gloucester	do	80	Gloucester, to North Bay.	Cape Sable	Stranding	Tides		do	1,300
Aug. 24	Rose	18	Austrian	Bk.	443	Chatham to Cardiff	Miramichi River	Damaged	Swung against anchor.		do	400
Mar. —	Sapho	10	Charlotteto'n. P.E.I.	Barque	559	Buenos Ayres to Barbadoes.	Near Barbadoes.	Stranding	Struck sunk rock.		Total	10,000
Apr. 13	Sea Foam	13	St. John	Schooner	68	Musquash to Rockland	Cutler's Maine	Collision with the schooner "Flora."			Partial	250
May 27	Sacrobosco	6	North Shields.	Steamship.	1431	Philadelphia to Chatham.	Fox Island, Miramichi	Collision with the "William Sinclair."			No loss.	
Mar. 2	St. Andrew	17	St. John.	do	782	London to New York.	Lat. 23°-90, Lon. 59°	Damaged.	Heavy gale.	1	Partial	3,000
Sept. 9	Sceptre	2	Lunenburg	Brigantine	141	St. Ann's Bay, Ja., to Lunenburg.	N. Lat. 31°-20', W. Lon. 71° 40'.	Hove on beam ends.	Hurricane		do	2,600 No cargo.
Aug. 14	Sultan	12	Windsor, N.S.	Barque	812	Pisqua to Boston	S. lat. 31°, W. long. 30°.	Damaged	Gales		Slight	100
Oct. 26	Scylla	6	Lunenburg	Schooner	101	North Sydney fishing.	Aspey Bay	Stranding	Heavy		Partial	800
Apr. 24	Tikoma	12	Chatham	Barque	799	Liverpool to St. John	Near Partridge Island, N.B.	Collision with the schooner North Erin.			do	360
Feb. 16	Transit	13	Annapolis	do	856	Signapore to Hong Kong.	N lat. 2° 49', E. long. 132° 33.	Stranding			Total	3,000
Sept. 8	Thorndale	6	Sunderland	Steamship	1970	Chatham to Liverpool, G.B.	Miramichi Bay	do	Mistook light		No damage.	

do	13	Thetis	17	Lunenburg	Schooner	44	Lockeport to Lunenburg.	Lockeport Harbour.	do	Misstayed		Total		600
													cargo	150
May	20	Thrasher	8	St. John	do	123	St. John to New York.	Handkerchief Shoals, U.S.A.	do	Tide		No damage.		
													cargo	250
Feb.	12	Unexpected	6	Windsor, N.S.	do	117	St. George to Halifax.	N. lat. 37° 20′, W. long. 10°.	Damaged	Heavy weath'r		Partial		350
Aug.	8	Union	⅓	St. John, N.S.	do	97	Quaco, N.B., to Shulee, N.S.	Quaco Bay	Capsized	Gale	3	do		1,100
Mar.	7	Vandalia	6	St. John	Ship	1422	Perth Amboy, W.I., to London, G.B.	English Channel	Collision with Duke of Buccleuch.		1	Total		60,000
													cargo	34,860
Jan.	30	Violet	13	do	Barque	846	New York to Cadif	Barnegat, W. I.	Stranding	Thick weather		Partial		10,000
July	30	Victoria	10	Santa Cruz	do	504	Havana to St. John	Grand Manan, N.B.	do	Thick fog		Total		10,000
													cargo	80,000
Sept.	19	Vidette	16	Port Hawkesbury.	Schooner	58	St. Peters to Port Hawkesbury.	Lennox Passage	Damages	Squall		Slight		100
May	27	William Sinclair.	4	Chatham, N.B	do	17	Chatham to Kouchebougnac.	Fox Island, Miramichi.	Collision with the Sacrobosco.			do		50
July	8	William D. Daisley.	18	American	do	93	Port Mulgrave to Malpeque.	Malpeque, Bar	Stranding	Tide		Partial		250
Apr.	24	Zelia	10	Quebec	do	7	Sydney to St. Pierre	W. St. Pierre, Gulf of St. Lawrence.	Foundering	Darkness		Total		3,000
													cargo	400

STATEMENT of Wrecks and Casualties reported as having occurred on the Inland Waters of Canada, for the Eleven months ended 30th November, 1889.

Date of Casualty.	Name of Vessel.	Age.	Port of Registry.	Rig.	Register Tonnage.	Port sailed from. — Port bound to.	Place where Casualty happened.	Nature of Casualty.	Cause of Casualty.	Lives Lost.	Total or Partial Loss.	Amount.
1889.												$
Aug. 31	Annie M. Foster.	13	Port Burwell..	Schooner ...	77	Charlotte to Kingston.	20 miles N. E. from Charlotte.	Collision with str. "Siesta"	.....	....	Total...	2,000
do 1	Algerian.....	15	Montreal.....	Pad	575	Montreal to Toronto ..	Farrens Point, Canal Bank.	Stranding .. .	Fog	....	Partial..	300
June 30	Armstrong....	....	American.....	Stern.....	....	Morrestown, U.S., to Brockville.	Brockville	Sank.....	Stern dropped out.	1	Total...	Unknown.
Sept. 23	Armenia.. ...	16	Toronto	do	402	Amhertsbug to Manista, Mich.	Lake St. Clair	Collision with American str. "Pontiac."	.....	....	Partial..	500
May 28	Bavaria.....	11	Kingston, Ont.	Schooner ...	361	Port Dalhousie to Kingston.	Gallow Island, Lake Ontario.	Stranding	Broke from tow.	8	do ..	500
Aug. 17	Bohemian	15	Montreal.. ...	Pad	690	Montreal to Cornwall..	Near Stanly Island	do	Mistook lights.	....	do ..	200
June 1	Challenger ...	3	Quebec.....	Tug	73	Quebec to Grosse Isle..	Opposite Quarantine Station.	Collision with barque "Napoléon."	.....	....	do ..	150 cargo 100
Aug. 8	E. Demers....	8	Montreal.....	Barge	159	Lanoraie to Montreal..	Montreal.....	Damaged.....	Tug let go tow line to soon.	....	do ..	1,000 cargo 250
Sept. 30	Erie Wave....	7	Port Burwell..	Schooner ...	72	Buffalo to Port Burwell	Lake Erie	Stranding	Gale..... ..	....	Total...	2,000
do 5	Lewis Ross ...	15	Port Hope....	do ...	212	Pelee Island to Toronto	Rondeau, Lake Erie...	do	Currents.....	....	do ..	4,000
June 8	Quebec.....	24	Montreal. ...	Paddle.....	56	Montreal to Quebec....	Intercolonial Railway wharf, Point Levis.	Collision.....	do	....	Very slight.	100
Oct 23	Quinte..... .	8	Deseronto	Stern	276	Deseronto to Pictou...	Quinte Bay.	Burned. .. .	Unknown	4 missing	Total...	16,000

Sept. 12	Rothesay	22	Prescott	Side wheel	528	Brockville to Prescott. ‡ of a mile above Prescott.	Collision with tug "Myra."	....	do ..	1,500
April 19	Sardonyx	20	Victoria	Schooner	561	Victoria to Nass River, Skena River, B.C.	Stranding	Prop. fouled	....	Partial.	Unknown.
Aug. 1	St. Lawrence	5	Clayton, N.Y.	Stern	188	Clayton to Alexander Bay. Stone Island, St. Lawrence River.	Stranded	Low water	....	do ..	750

SUPPLEMENT to the Statement of Wrecks and Casualties reported as having occurred to British, Canadian and Foreign Sea-going Vessels, during the Calender Year of 1888.

Date of Casualty.	Name of Vessel.	Age.	Port of Registry.	Rig.	Register Tonnage.	Port sailed from. — Port bound to.	Place where Casualty happened.	Nature of Casualty.	Cause of Casualty.	Lives Lost.	Total or partial Loss.	Amount.
1888.												$
Nov. 15	Angelina	23	Machias, Me.	Barquentine	270	St. John to New York.	St. John Harbour	Burned	Wreck		Partial	400
do 25	Avalon	new	Windsor, N.S.	Schooner	121	do do	Spectacle Island, U.S.	Stranding	Gale	3	do	1,500 cargo 500
Dec. 5	Annie G	2	Dorchester	do	116	Dorchester to New York.	Negro Head, St. John Co., N.B.	do	Current		Total	5,000 cargo 30
Nov. 24	Alice	7	Shelburne	Brigantine	98	Boston, U.S., to Lockeport	Gloucester, Mass	do	Chains parted.		do	5,000 cargo 8,000
do 25	Aspatogon	12	Pictou	Barque	574	St. Martin's Island to Boston.	Boston Bay	Damaged	Gale		Partial	1,000
Oct. 26	Alpheta	11	Port Hawkesbury.	Brigantine	299	Dunkirk to Rio Janeiro.	50 miles from Shaw Point.	Collision, oth'r ship not porting helm.			do	900
Aug. 20	Acacia	1	Lunenburg	Schooner	117	Yarmouth to La Have.	Lockeport	Stranding	Error in judgment.		Trifling.	
Dec. 19	Astracona	22	St. John, N.B.	Ship	1193	Philadelphia to Havre.	English Channel	Collision with schr. "Borussia"			Total	15,000
do 3	Aeronaut	2	Yarmouth, N.S.	Brigantine	446	Cardiff to Rio Janeiro.	England	Collision with the Norwegian vessel "Marie."			Partial wreck.	
Oct. 26	Annie Florence	35	Charlottetown	Schooner	35	Summerside to Shediac	2 miles west of Cape Balde.	Stranding	Fog		Partial	700 cargo 800
Nov. 3	Beatrice	5	Yarmouth	do	109	G. B. Fishing Grounds to Yarmouth.	Hill Point, N.S.	do	do		Total	6,000 cargo 1,500

Dec.	7	Beau Bassin..	22	Charlottetown	do ...	52	Pictou to Charlottetown.	Little Harbour, N.S...	do ...	Gale.....	Partial..	300 cargo 165
do	12	Bridget Ann..	8	Port Hawkesbury.	do ...	32	At Margaree..... ..	Margaree Harbour....	Damaged.....	do	do ..	5,500
do	13	Bessie Gracie..	12	Halifax.	Brigantine..	190	Porto Rico, W.I., to Halifax.	W. side of the Island of Porto Rico.	Stranding....	.....	Total..	6,000
Nov.	25	Blucher.....	....	German	Steamship..	1206	New York to Hamburg	300 miles from Halifax.	Sprung a leak.	Hurricane	Trifling.	
Dec.	7	Beau Bassin ...	26	Charlottetown	Schooner ...	52	Pictou to Charlottet'wn	Roy's Island. N.S	Stranding....	Gale	Partial wreck.	
May	23	Christina.....	14	St. Andrews, N.B.	Barque.....	563	Swansea to Cape Town.	Atlantic..... ...	Seen by "Aurora" on fire, not since heard from.	.....	Total ..	2,000
Dec.	7	Charles Frederick.	31	Port Hawkesbury.	Schooner ...	34	Port Hastings to Grand Narrows.	Harbor of Pt. Hawkesbury.	Stranding....	Gale.....	Partial..	150
Nov.	13	Clifton.....	5	Windsor, N.S.	do	473	Windsor to New York.	Meeting House Shoals, U.S.	Struck bottom	....	do .	500 cargo 78
July	11	C. E. Robinson	12	St. John, N.B.	Bk..... ..	530	Wilmington, U.S., to Ensenada.	Delaware Bay, U.S...	Collision with schr. "Rebecca M. Walls."	....	Total ..	10,000
Nov.	25	Curaco..	16	Windsor, N.S.	Bk.....	368	Curacoa to New York.	Gulf Stream, Hatteras, U.S.	Damaged ...	High winds.....	Partial..	500
do	30	Clara	21	St. John, N.B.	Schooner ...	94	Harvey, N.B., to Boston.	Shepody, N.B	Stranding....	Had no pilot.....	Total ..	1,500 cargo 600
Dec.	31	Clifton..	6	Windsor, N.S.	do	473	Windsor to New York.	11 miles west of Point Judith.	do	Fog....	do ..	3,000
Nov.	3	Cashier.....	8	Lunenburg, N.S.	do	121	Westport to Digby, N.S	Digby.....	Fell on her side and filled.	....	Partial wreck.	
do	29	Ceylon	15	Windsor, N.S.	Ship.....	943	Sunderland to Rio de Janerio	Winterton Ridge, North Sea.	Stranding....		Partial..	3,200
Nov.	21	Donald Cann, new		Yarmouth, N.S.	Schooner...	123	Montague to Yarmouth	Old Man, Ledge, N.S..	Stranding. ...	Hidden rock.....	Partial..	1,000 00
do	25	Dallas Hill...	5	St. John.....	do ..	109	St. John to Providence	Thompson's Island, N.S	do	Gale.....	Total...	3,000 00 c'rgo 900 00
do	25	Dart.....	7	do	do ..	98	Boston to St. John ...	do ..	do	....	....	
Oct.	17	Dexter.....	10	Liverpool.....	do ..	148	Boston to Liverpool, N.S.	Liverpool Harbour ...	do	Wind.....	Partial..	1,000 00 cgo 1,500 00

SUPPLEMENT to the Statement of Wrecks and Casualties reported as having occurred to British, Canadian and Foreign Sea-going Vessels, during the Calendar Year of 1888—*Continued*

Date of Casualty.	Name of Vessel.	Age.	Port of Registry.	Rig.	Register Tonnage.	Port sailed from. — Port bound to.	Place where Casualty happened.	Nature of Casualty.	Cause of Casualty.	Lives Lost.	Total or Partial Loss.	Amount.
1888.												$
Nov. 22	Emma G.	10	St. John	Schooner	82	Washademoak to Rockland, N.S.	King's Co., N.B.	Damaged	Ice		Partial	200 00
do 25	E. Walsh	16	Digby, N.S.	do	146	Bear River to Boston	Little River, Maine, U.S.	Stranding	Gale		do	2,000 00 c'rgo 100 00
Dec. 17	Ella J.	18	St. John	do	69	Sackville, N.S. to St. John.	Anval Rock, Quaco Bay	do	do		Total	2,800 00 cgo 1,200 00
do 12	Emma	8	Port Hawkesbury.	do	24	St. Margaree	Margaree Harbour	Damaged	do		Partial	50 00
Oct. 26	Ella Moore	21	Windsor, N.S.	Barque	391	Glasgow to St. John	400 miles to Sea	do	do		do	1,900 00
Dec. 12	Effort	9	Port Hawkesbury.	Schooner	110	Halifax to Jordan River	LaHave Harbour, N.S.	Stranding			Total	6,000 00 cgo 1,200 00
do 23	Etta	25	Belfast, Ire.	Ship	1154	St. John, N.B. to Fleetwood.	Creadon Bay, near Waterford.	do	Gale	1	do	15,000 00 cgo 9,202 00
do 5	Ellerslie	16	Liverpool, G.B.	do	1346	Halifax to Liverpool, N.S.	Atlantic	Sprung a leak.			Partial	1,500 00
Sept. 7	Esk	1	Lunenburg, N.S.	Schooner	147	Liverpool to Providence	Coast of Virginia	Stranded	Gale		Total	7,000 00
Sept. 9	Fearless	30	Windsor, N.S.	do	59	Trading in Minas Basin	Minas Basin	Stranding	Dragg'd anch'r		Total	500
Nov. 25	Glide	8	do	do	66	New York to Cornwallis	Vineyard Haven, U.S.	Damaged	Gale		Partial	120
July 10	George Davis	11	do	Barkentine	643	Halifax to Philadelphia	Atlantic	do	do		do	800
Dec. 12	George Lamb	6	St. Andrews	Schooner	148	St. Pierre to Sydney, C.B.	St. Pierre Miquelon	Stranded			Total	5,000

do	15	Golden Rule	18	Sydney, C.B.	do	51	St. Pierre to Newfoundland.	St. Pierre	do	Gale		do	600	
Oct.	28	Hasty	29	Gaspé	do	46	Charlottetown to Gaspé	1 mile west of Cape Despair.	Stranding	do		Serious wreck.	Unknown.	
Nov.	25	Hilda	10	Pictou, N.S.	Barque	719	Algiers to Gloucester	Boston Bay	Damaged	do		Partial. do	10,000	cargo 500
do	8	Helena May	3	Halifax	Schooner	70	Canso to Halifax	Goose Island	Leak			Trifling.		
Dec.	13	Helen	15	Port Hawkesbury.	do	19	Port Hood to Margaree	Margaree Harbour	Stranding	Gale		Partial.	100	cargo 500
Oct.		Highland Prince.	5	Bristol, Eng.	do	978		Varennes	Grounded			No damage.		
Dec.		Hippomeras	3	Guysboro	do	97	Yarmouth to Barbadoes	Atlantic	Never heard from.		All	Total	8,000	
Sept.	6	H. C. Curtis	11	Quebec	Tug	36	Quebec, working at Coteau Landing.	Clarke Island	Broken Crank Shaft.			Partial.	400	
do	20	Harrie	17	St. Andrews	Schooner	91		Little Manan Island	Stranding			Total	1,000	
do	19	Ino	17	Charlottetown	do	18	Campbellton to Shediac	Tabasinlac Beach	do	Gale		do	300	cargo 100
do		I. G. C	10	Halifax, N.S.	do	40	Salmon Riv. to Halifax	Off White Island, N.S.	Damaged	Squall		Partial.	Unknown.	
Apr.	16	J. W. Russel	10	Port Medway	Schooner	53	Grand River to Sydney, C.B.	Grand River	Stranding	Gale		Total	1,000	
Nov.	26	J. J. Locke	21	Yarmouth	do	54	Boston to Barrington, N.S.	Scituate Beach, N.S.	do	do		do	1,200	cargo 2,700
do	12	Jumbo	6	St. John, N.B.	Brigantine	346	Liverpool to Rosario	Buenos Ayres	do	Thick weather		do	12,000	cargo 12,500
Dec.	2	John E. Sayre.	4	do	Ship	1548	New York to Shanghai	Near Shanghai	do	Ship sheered		do	4,000	
do	31	Knights Templar.	1	Shelburne	Schooner	90	Sydney to St. Pierre	Lat. 46° 05′, long. 56° 40′.	Damaged	Gale		Partial	700	
Oct.	1	Lily of Clyde	21	do	do	61	Sydney to Aspy Bay	White Point, C.B.	Stranding	Chains parted.		Total	1,200	cargo 1,500
Nov.	26	Lynwood	8	Windsor	Steamship	1150	Rio Janeiro to Sandy Hook.	At sea	Damaged	Gale		Partial	750	
Sept.	6	May Bell	14	St. John, N.B.	Schooner	76	Grand Lake to Rockland, N.S.	Head of Falls, St. John.	Stranding	Pilot		do	300	

SUPPLEMENT to the Statement of Wrecks and Casualties reported as having occurred to British, Canadian and Foreign Sea-going Vessels during the Calendar Year of 1888—*Continued.*

Date of Casualty.	Name of Vessel.	Age.	Port of Registry.	Rig.	Register Tonnage.	Port sailed from. — Port bound to.	Place where Casualty Happened.	Nature of Casualty.	Cause of Casualty.	Lives Lost.	Total or Partial Loss.	Amount.
1889.												$
Oct. 20	Minnie Burrill	7	Yarmouth	Ship	1465	Penarth to Monte Video.	English Banks, River de La Plata.	Stranding	Gale		Total	30,000
do 28	Martha J. Brady.	13	Windsor	Brigantine	287	Annapolis to Savanna.	San Louis, San Domingo.	do	do		do	3,000
Nov. 10	Margaret Ann.	20	Port Hawkesbury.	Schooner	50	Montague, P.E.I., to St. Peters, N.S	Boughton Bay, P.E.I.	do	Wind and th'k weather.		do	600 cargo 33
Oct. 9	Mary R. Campbell.	17	Montreal	Barque	576	New York to Montreal.	3 miles below Mahone lighthouse.	do	Gale		do	4,750 cargo 3,200
Nov. 18	Moss Glen	5	Port Medway	Schooner	150	Halifax to Jamaica	Off Liverpool	Collision with wreck stmr.			Partial	
	Naiad	23	Parrsboro'	do	56	Joggins to St. John	Cumberland Bay, N.S.	Stranded	Dragged anchor.		Total	400
Nov. 16	North America	8	Yarmouth	do	138	Port Richmond to Bermuda.	N. lat. 43° 21′, W. long. 61° 38′.	Lost deck load	Gale			
Oct. 8	Nicosia	10	St. John	Steamship	1094	Falmouth to Roterdam.	W. lat. 7° 35′, W. long. 26° 12′.	Collision with ship "Rimac."			Partial	250
June 26	Onward	20	Charlottetown	Schooner	20	Charlottetown coasting	Rustico breakwater.	Stranding	Fog		Total	500
Aug. 12	Pearl	7	Windsor, N.S.	do	163	New York to Conlon	Caicos Passage, Bahamas.	Damaged	Gale		Partial	1,250
Nov. 20	Pomeranian	7	Glasgow	Steamship	2832	Quebec to London	Allan Line wharf Montreal.	Damaged by fire.	Wreck		No loss	cargo 600
do 25	Plover	6	St. John	Brigantine	385	Rio Grande to New York.	N. lat. 37, W. long. 74°.	Wrecked	Heavy weath'r	1	Total	7,750

Aug.	22	Resolven	16	St. John's, Nfld.	Brig	151	Northport, N.S, to Harbour Grace.	Northport Bar, N.S.	Stranded	Gale		do	1,000
Oct.	29	Russian Councillor.	20	St. John, N.B.	Schooner	65	Parrsboro' to West Bay.	West Bay, N.S	Collision with bark "Carl Link."			Slight	75
Nov.	26	Sunbeam	13	do	do	78	Rockland to St. John	West Quoddy Bay, N.B.	Stranding	High winds		Total	1,000
Jan.	22	Sarnia	6	Liverpool	Steamer	2422	Baltimore to Halifax	Atlantic	Cargo shifted	Gale		No loss	
Aug.	18	Sardinian	11	Quebec	Ship	1543	St. Thomas to Hiogo, Japan.	do	Sprung a leak.	Wreck		Unk'wn	
Nov.	25	Sarah Alice	4	Halifax	Schooner	92	Porto Rico to Halifax.	Lat. 24° 40', long. 72° 30'.	Damaged	Gale		Slight	100
Dec.	12	St. Mary	5	Port Hawkesbury.	do	15	St. Margaree	Margaree Harbour	do	do		Trifling.	60
Dec.	3	Swift Current.	3	Halifax	Schooner	63	Halifax to Ingonish Harbour.	Entrance to Ingonish Harbour.	Standing	Tide		Total	3,000
Nov.	4	Sarah Carlin	7	do	do	148	Halifax to Bridgewater, N.S.	S. W. of Little Duck Island.	do	Wind		do	5,000
Dec.	21	Snowdrift	5	do	do	58	Charlottetown, P.E.I., to Boston.	Rocky Point	do	Snow storm		Slight	
do	27	Stephen D. Horton.	5	Parrsboro', N.S.	Ship	1626	St. Helena to New York.	S. Lat. 7° 38', W. Long. 28° 22'.	Burned	Spontaneous combustion.	2	Total	45,000
Nov.	27	Sheila	13	St. John, N.B.	Barque	967	Rio Janeiro to Norfold, Va.	North Atlantic	Dismasted and abandoned.	Gales		do	20,000
Dec.	13	Steinvora	13	Pictou, N.S.	Ship	1107	New York to Brisbane.	N. Lat. 35° 27', W. Long 66° 20'.	Dismasted	Hurricane		Partial	14,600
Nov.	12	Tamar E. Marshall.	5	Digby	do	1270	Boston to Iloils	Palawan, Philipn Islands.	Stranding	Gale		do	
Oct.	28	True	24	St. John	Schooner	60	Parrsboro', N.S., to West Bay, N.S.	Parrsboro'	do	Rudder head twisted.		do	100
do	29	Teazer	34	Halifax	do	31	Halifax to Spry Bay	Pleasant Harbour, N.S.	do	Dragged anchor.		Total	300
Aug.	14	Thingvalla		Danish	Steamer	2524	Copenhagen to New York.	45 miles S.-W. Sable Island.	Collision with the "Geiser."			Wreck	

SUPPLEMENT to the Statement of Wrecks and Casualties reported as having occurred to British, Canadian and Foreign Sea-going Vessels during the Calendar Year of 1888—*Concluded.*

Date of Casualty.	Name of Vessel.	Age.	Port of Registry.	Rig.	Register Tonnage.	Port sailed from. — Port bound to.	Place where Casualty happened.	Nature of Casualty.	Cause of Casualty.	Lives Lost.	Total or Partial Loss.	Amount.
1888.												$
Oct. ..	Vixen	28	Sydney	Schooner	43	Cow Bay to Charlottetown.	Point Prim, P.E.I.	Beached	Leak	..	Total	1,000
do 29	Vesta	21	St. John, Nfld.	Brigantine	148	Harbour Grace to North Sydney.	Cranberry	Wrecked	Fog	..	do	2,000
do 18	Vertigo	13	Gaspé	Sloop	13	Grand Greeve to Fox River.	Fox River, Gaspé, Que.	do	Gale	..	do	300
												cargo 200
Dec. 12	Venture	6	Sydney	Schooner	19	Victoria, N.S., to Whycocamah.	N. Sydney Harbour	Stranding	do	..	do	500
												cargo total wreck.
do 12	W. Wright	23	Charlottetown	do	59	Grand Narrows to Charlottetown.	E. side of Smiths Island, N.S.	do	do	..	do	1,500
do 24	William K. Chapman.	10	Dorchester	Barge	1077	Cuxhaven to New York.	20 miles S.-E. of North Foreland.	Collision with stmr. "Bedlarmio."	..	..	do	2,000
Aug. ..	W. H. Mitchell	..	American	Schooner	198	Apple River to New York.	Apple River, N.S.	Stranding	Storm	..	Partial	Unknown.
Dec. 13	W. C. Silver	14	Port Hawkesbury.	do	98	Baddeck to St. Pierre	Dog Island, St. Pierre, Miq.	do	Gale	..	Total	2,000
												cargo 800
Nov. 29	White Wings	½	Charlottetown	do	93	Liscomb to Boston	Liscomb Light	do	..	..	do	9,000
do 25	Wilhelmina	10	Lunenburg	Barquentine	166	Demerara to Halifax	N. Lat. 37°, W. Long. 71° 30′	Foundered	Hurricane	..	do	7,000
.....	Willow	23	Yarmouth	Schooner	19	Westport to Maitland	Maitland	Stranding	Gale	..	do	300

SUPPLEMENT of the Statement of Wrecks and Casualties reported as having occurred on the Inland waters of Canada during the Calendar Year of 1888.

Date of Casualty.	Name of Vessel.	Age.	Port of Registry.	Rig.	Register Tonnage.	Port sailed from. — Port bound to.	Place where Casualty happened.	Nature of Casualty.	Cause of Casualty.	Lives Lost.	Total or Partial Loss.	Amount.
1888.												$
Sept. 29	Brandon	2	Montreal	Schooner	517	Kingston to Whitefish Point.		Foundering 70 miles S.W. of Isle Royal.	Gale		Total	23,307
July 11	Bay Trader	16	Port Rowan	do	173	Port Rowan to Detroit		Stranding 9 miles west of Port Rowan.	Storm		Partial	300
Aug. 8	Belle Wilson	8	Picton, Ont.	Barge	11	Sarnia to Algoma	Fox Island, Miramichi.	Foundering	Gale		Total	6,000
Sept. 11	Dora	7	Cobourg	Steamer	13	Harwood, Rice Lake	Harwood	Burned	Unknown		do	500
Nov. 11	E. H. Rutherford.	7	Hamilton	Schooner	286	Toronto to Soders Point	Charlotte, N.S.	Stranded	High wind		Partial	1,300
Oct. 24	F. V. Specht	21	Windsor, Ont.	Fore and Aft	55	Amherstburg to Detroit	2 miles below Windsor.	Sank	Sunken spiles		Total	unknown
Nov. 6	Gladys	6	New Westminster.	Steamer	146	New Westminster to Chilliwhack.	Johnson's Landing, B.C.	Damaged	Sunken snag		Partial	500
Oct. 2	Isaac May	16	Toronto	Barge	393	Parry Sound to Tonawanda.	Georgian Bay	Stranded			do	unknown
July 11	John Tibbets			Fore and Aft	114	Buffalo to Kelley's Island.		Foundering 7 miles west of Port Rowan.	Sprung a leak.		Total	unknown
Sept. 15	Kincardine	19	Goderich	Schooner	135	Owen Sound to Midland.	French River	Stranding	Struck a rock		Partial	2,000
Nov. 16	Magdalena	12	Collingwood	Steam tug	13	Bruice Mines	Grant's Island, Algoma	Stranding	Snowstorm		Total	cargo 500 2,000
Sept. 6	Otonabee	21	Toronto	Schooner	225	Collins Inlet to Morpeth, Ont.		Stranding 500 miles w. Morpeth Pier.	Wind and sea			unknown
Oct. 22	Richmond	2	New Westminster.	Sloop	102	North America to Vancouver.	Fraser River	Burnt	Unknown		Total	7,000
May 16	William Elgin	18	Picton, Ont.	Schooner	156	Oswego to Belleville		Foundering 16 miles N.W. of Oswego.	Sprung a leak.		do	3,000 cargo 1,260

APPENDIX No. 3.

REPORT OF THE HARBOUR COMMISSIONERS OF MONTREAL FOR THE CALENDAR YEAR ENDED 31st DECEMBER, 1889.

HARBOUR COMMISSIONERS OF MONTREAL,
SECRETARY'S OFFICE, MONTREAL, 25th March, 1890.

SIR,—I have the honour, by direction of the Harbour Commissioners of Montreal, to forward herewith, for the information of the Honourable the Minister of Marine and Fisheries, statement of the general receipts and disbursements of the Trust for the year ended 31st December, 1889.

The ordinary revenue from wharfage dues shows an increase over that of 1888 of about $33,000, or over 15 per cent.

The following Departmental reports have already been forwarded you, viz.: the Chief Engineer's on the harbour works; the Harbour Master's, with comparative statements of the trade of the port; the Chief Engineer's on the maintenance of the buoys and beacons on the river; and the report on matters relating to the Pilotage District under the jurisdiction of the Commissioners.

From the Harbour Master's report it will be seen that there was a considerable increase in the business of the harbour during the past year, the increase of ocean-going vessels being 40 and of tonnage 40,692, while of inland vessels there was an increase of 347 and of tonnage 206,695, which gave a total increase in tonnage equal to 15 per cent. over 1888.

A report on the improvement of the ship channel between Montreal and Quebec for the first half of the last fiscal year, or to 31st December, 1888, when the Department of Public Works assumed direction of the said work, was furnished to the said Department in August last.

Under the new Act, 52 Vic., chap. 34, the buoys and beacons on the ship channel between Montreal and Quebec were, by agreement with the Marine Department, maintained by the Commissioners, but at a cost to the latter of over $3,000, as will be seen by reference to the statement.

I have the honour to be, Sir,
Your obedient servant,
ALEXANDER ROBERTSON,
Secretary.

WM. SMITH, Esq.,
Deputy Minister of Marine,
Ottawa.

HARBOUR COMMISSIONERS OF MONTREAL.

STATEMENT of General Receipts and Disbursements for the Year ended 31st December, 1889.

RECEIPTS.

	Revenue.	Capital.
	$ cts.	$ cts.
Balance at 31st December, 1888:—		
Cash in Bank of Montreal and on hand	7,664 14	
Special deposits do at interest	140,000 00	
Sundry accounts due for wharfage, &c. $4,936 80		
LESS—Harbour coupons outstanding 642 50		
	4,294 30	
Macadamizing stone, coal and timber on hand	3,191 90	
		155,150 34
Montreal Decayed Pilot Fund (held in trust for) at 31st Dec., 1888:—		
Montreal Harbour Debentures	40,000 00	
do City Consolidated Fund	5,000 00	
do City and District Saving's Bank (deposit at interest)	937 69	
		45,937 69
Trinity dues (5 per cent. of all pilotage dues) account above fund	2,549 37	201,088 03
Interest on investments and on cash in bank fund	2,533 86	5,083 23
Sundry Receipts on Capital Account:—		
New construction account from Hochelaga Cotton Manufacturing Co. for making drain	621 38	
Harbour dredging account, work performed for credit of	149 90	
New channel operations, balance of cash advanced Mr. W. L. Scott in 1888.	52 64	
		823 92
Marine Department: grant for buoys and beacons for 1888		7,000 00
Ordinary Revenue from Collector H. M. Customs, Montreal:—		
Wharfage dues on goods inwards	141,197 54	
do do outwards	81,347 34	
From Wharfinger (or Local Traffic):—		
Wharfage dues on goods inwards	8,173 22	
do do outwards	2,422 93	
Tonnage dues on barges (incurred in May, 1888)	20 78	
Commutation of dues on steamer's freight	10,300 00	
Rental of basin for small boats	50 00	
Rentals of spaces for lumber	2,260 00	
do do coal	1,556 70	
do do small offices	972 75	
do do scales	900 00	
do do firewood	444 25	
Revenue from penalties	14 00	
		249,659 51
Canadian Pacific Railway Co., rental of wharf tracks for 1888 and 1889		4,344 65
Department of Railways and Canals, rental of offices in harbour building	1,250 00	
John Lee & Co., rental of portion of harbour yard	250 00	
		1,500 00
Sundry Receipts on Maintenance Account:—		
Harbour interest, from Bank of Montreal, on deposits	1,644 12	
Great Eastern Ry. Co., on account of Montreal and Sorel Railway's debt	50 00	
Monies found in vault (seized wages, never claimed)	16 75	
Pilots' licenses, 4 at $10 each	40 00	
Harbour repairs, work perpormed for credit of	32 30	
		1,783 17
Buoys and beacons, work performed for credit of	66 63	
Marine Department, contract price for buoys and beacons for 1889, and to 30th March, 1890	12,000 00	
		12,066 63
		483,349 14

STATEMENT of General Receipts and Disbursements, &c.—*Concluded.*

DISBURSEMENTS.

	Revenue.	Capital.
	$ cts.	$ cts.
On Capital Account, New Works, Plant, &c.:—		
Harbour railway, new siding on Section 31	147 67	
do plant, diving suit	300 00	
New construction account, new wharves at Hochelaga (see *contra* for credit).	62,479 25	
Harbour dredging in connection with new wharves at Hochelaga (see *contra* for credit)	57,073 28	
		120,000 20
New channel operations, for damage to Sorel buildings (see *contra* for credit)		1,000 00
On Montreal Decayed Pilot Fund Account:—		
Pensions to old pilots and widows of pilots	4,172 49	
Audit of fund for 1888	25 00	
Stationery, printing and postage	11 19	
		4,208 68
On Account of Interest, Management and Maintenance:—		
Harbour interest on debentures and Government Demand Loan (see *contra* for credit)	112,405 00	
Harbour interest, Bank of Montreal, for paying July coupons	137 50	
Mrs. John Young, annuity	600 00	
Refunds of wharfage dues	147 18	
Deductions from two 1888 accounts to effect settlements	127 50	
Harbour expenses and management (salaries, &c.)	23,469 83	
Printing, advertising and stationery	1,595 92	
Travelling and incidental expenses	145 63	
Legal and notarial expenses	101 00	
Pilotage expenses, Quebec agent, office, &c. (see *contra* for credit)	955 57	
Harbour dredging, cleaning out deposit in Sections 15 and 17; digging sand in Sections 19 and 21	646 48	
Harbour survey	917 66	
Electric lighting	4,881 77	
Harbour repairs (see *contra* for credit)	51,923 88	
		198,054 92
On Account of Buoys and Beacons:—		
Maintenance thereof during 1889 (see *contra* for credit)		15,102 16
Total Disbursements		338,365 96
Balance at 31st December, 1889, made up as follows:—		
Cash in Bank of Montreal and on hand	63,392 35	
Wm. L. Scott, deposit with, on account buoys and beacons	20 23	
Louis Paré, depoit with, on account timber	34 18	
Sundry accounts due for wharfage, &c. $ 1,652 50		
Canadian Pacific Ry. Co., for rental of tracks in 1888 and 1889. 4,344 65		
Marine Department, for buoy service in 1889 12,000 00		
Total of outstanding accounts 17,997 15		
LESS—Harbour coupons outstanding. 667 50		
	17,329 65	
Macadamizing stone, coal, timber, lumber and treenails on hand	17,394 53	
		98,170 94
Montreal Decayed Pilot Fund (held in trust for), at 31st December, 1889:—		
Montreal Harbour Debentures	40,000 00	
do City Consolidated Fund	5,000 00	
do City and District Saving's Bank, deposit at interest	1,812 24	
		46,812 24
		483,349 14

ALEX. ROBERTSON, *Secretary.*

HARBOUR COMMISSIONER'S OFFICE,
MONTREAL, 15th March, 1890.

Verified,
RIDDELL & CARMAN, *Auditors.*

REPORT OF THE HARBOUR MASTER OF THE PORT OF MONTREAL, FOR THE YEAR 1889.

HARBOUR COMMISSIONERS OF MONTREAL,
HARBOUR MASTER'S OFFICE, MONTREAL, 6th January, 1890.

ALEXANDER ROBERTSON, Esq., Secretary,
Harbour Commissioners of Montreal.

SIR,—For the information of the Board of Harbour Commissioners I beg to submit the following as my Annual Report for the year 1889, with six comparative statements, showing the number, tonnage, classification, nationality, greatest number of vessels in port at one time, number and tonnage of sea-going vessels consigned to the different agents, with statements showing the number and tonnage of inland vessels, and the greatest number in port at one time during the past ten years.

Six hundred and ninety-five sea-going vessels arrived in port during the season, of the aggregate tonnage of 823,165 tons (of this tonnage 49,538 passed into the canal), showing an increase of 40 vessels, and 40,692 tons in tonnage, as compared with the year 1888. Of these vessels, 526 were built of iron, of an aggregate tonnage of 767,654 tons, and 169 of wood, of an aggregate tonnage of 55,511 tons. Of inland vessels there arrived in port 5,847, of an aggregate tonnage of 1,069,709 tons, showing an increase of 347 vessels and in tonnage 206,695 tons, and a total of 6,542 vessels of all classes and 1,892,876 tons in tonnage, showing an increase of tonnage of vessels of all classes of 247,387 tons.

Some of the principal items of exports and imports during the season :—

EXPORTS.

Lumber.

There were shipped to the United Kingdom 113,746,611 feet; to South America 23,020,663 feet; total shipment, 136,767,274 feet, showing an increase of 15,787,393 feet over the previous year.

Grain.

There were shipped 2,285,930 bushels of wheat, 6,553,950 of corn, 914,162 of ptas, 19,920 of oats, 69,213 of rye, making a total of 9,843,175 bushels, and an increase of 4,184,948 bushels over the previous year.

Phosphate.

There were shipped 21,824 tons, showing an increase of 5,691 tons as compared with 1888.

Flour and Cheese.

There were shipped in bags and barrels equal to 519,579 barrels, and of cheese, 1,144,396 boxes.

Apples.

There were shipped during the season 138,020 barrels, during the previous season of 1888, 264,113 barrels, showing a decrease of 126,093 barrels. The crop of 1889 was about one-half of the previous year, which accounts for the great decrease in exportation.

Cattle and Sheep.

Cattle shipped, 85,053 head, and 58,983 sheep, showing an increase of 24,053 head of cattle and 12,983 sheep.

IMPORTS.

Coal.

We had from Great Britain 32,481 tons, showing a decrease of 7,908 tons; from the United States 196,913 tons, showing an increase of 10,897 tons, making a total

of 229,394 tons; from the Maritime Provinces 350,285 tons, showing a decrease of 52,439 tons and a grand total of 579,679 tons. The Grand Trunk brought nearly all their coal in by rail, which accounts for the decrease by water of soft coal.

Portland and Roman Cement.

We had 115,912 barrels.

Scrap Iron.

Scrap iron has become quite an item of import. We had discharged in the harbour during the season 23,911 tons.

WHARF ACCOMMODATION.

During the past season the extension of the wharves at Hochelaga has been pushed forward. I expect that in the early spring there will be two or three steamship berths available at the new works, and by the fall the work will be so far advanced that the St. Lawrence Sugar Refinery Company will be able to discharge ships opposite to their refinery.

There has been a good deal of necessary repairs done to the wharves in the harbour during the season, such as re-planking nearly all the face of the wharf, from section 30 to section 40, rebuilding the wharf at the entrance to No. 1 Lock, repairing the wharf on the island used by the Hansa Steamship Company and White Cross Line, repairs to the pier used by the Montreal and Quebec line of steamers; also, rebuilding the wharf, sections 33 and 34, at Hochelaga.

A short portion of the roadway opposite the Canadian Pacific Railway and Grand Trunk Railway offices on the wharf was planked, which I consider a great success, I would strongly recommend that next spring the planking be extended west to the Allan Line, and east to section 16. The roadway between these two points being narrow, it is impossible to keep it in repair with macadam. Plank would make a good road; and, in my opinion, taking into consideration the number of men constantly employed trying to keep it in repair, planking would be much the cheapest.

PORT OF MONTREAL.

COMPARATIVE Statement showing the number, tonnage and classification of Sea-going Vessels that arrived in Port the past ten years, with the dates of the greatest number in Port at one time each year.

Years.	Steamships.	Tonnage.	Ships.	Tonnage.	Barques.	Tonnage.	Brigs.	Tonnage.	Brigantines.	Tonnage.	Schooners.	Tonnage.	Total Number of Vessels.	Total Tonnage.	Greatest Number in Port at one time.	
1880	354	475,741	42	50,141	143	76,816	11	3,252	41	9,715	119	12,606	710	628,271	Aug. 4..	67
1881	321	446,457	5	4,640	104	60,617	9	2,377	30	6,152	100	11,686	569	531,929	do 14..	59
1882	379	475,679	4	4,330	93	51,195	10	2,702	37	7,182	125	13,604	648	554,692	do 21..	53
1883	464	605,805	3	3,356	70	38,547	7	2,417	15	3,012	101	11,126	660	664,263	June 27..	38
1884	444	585,397	2	2,218	83	49,048	3	1,036	13	2,996	81	8,679	626	649,374	Aug. 13..	44
1885	441	619,647	2	2,792	76	45,560	1	338	23	6,141	86	9,376	629	683,854	July 15..	43
1886	532	736,648	11	13,475	68	47,233	10	3,061	7	1,850	75	7,432	703	809,699	Aug. 18..	44
1887	600	807,471	7	8,684	68	43,275	2	1,118	7	2,031	82	8,194	767	870,773	July 21..	37
1888	532	742,276	7	9,634	32	20,218	.....	.....	10	2,631	74	7,714	655	782,473	June 27..	36
1889	522	763,783	8	11,923	49	33,982	4	1,239	11	2,356	101	9,882	695	823,165	Aug. 14..	39

ALEXANDER ROBERTSON,
Secretary.

PORT OF MONTREAL.

COMPARATIVE Statement showing the number, tonnage and classification of Sea-going Vessels that arrived in Port from the Maritime Provinces the past ten years.

Years.	Steamships.	Tonnage.	Ships.	Tonnage.	Barques.	Tonnage.	Brigs.	Tonnage.	Brigantines.	Tonnage.	Schooners.	Tonnage.	Total Number of Vessels.	Total Tonnage.
1880	88	62,688	3	2,492	59	36,294	1	413	17	5,001	68	6,562	236	113,450
1881	104	80,040	1	734	44	10,666	2	553	13	2,502	48	4,883	212	99,378
1882	168	136,036	.....	.....	25	15,574	.....	.....	13	2,364	54	5,993	260	159,967
1883	191	164,982	.....	.....	11	8,066	1	307	6	1,015	54	5,620	263	179,990
1884	161	124,377	.....	.....	8	5,031	.....	.....	1	456	40	3,825	210	133,689
1885	142	117,436	.....	.....	18	11,997	.....	.....	10	2,307	47	4,814	217	133,554
1886	175	150,784	.....	.....	4	2,535	3	794	2	466	41	2,902	225	157,481
1887	224	194,023	2	2,389	11	8,676	1	313	2	342	36	3,139	276	208,882
1888	213	195,598	1	1,199	4	3,079	.....	.....	3	701	35	3,375	256	203,952
1889	184	173,076	.....	.....	1	998	.....	.....	3	441	52	4,668	240	179,183

ALEXANDER ROBERTSON,
Secretary.

PORT OF MONTREAL.

STATEMENT showing the Nationality and Tonnage of Sea-going Vessels that arrived in Port during the season of 1889 that were navigated by 20,254 seamen.

Nationality.	Number of Vessels.	Tonnage.
British	641	766,322
Norwegian	26	17,098
German	16	21,976
French	8	13,863
Spanish	2	3,151
Russian	2	755
Total	695	823,165

ALEX. ROBERTSON, *Secretary.*

PORT OF MONTREAL.

NUMBER and Tonnage of Sea-going Vessels consigned to the following merchants during the season of 1889.

No.	Names.	Steam.	Tonnage.	Sail.	Tonnage.	Total Vessels.	Total Tonnage.
1	H. & A Allan	71	169,702			71	169,702
2	R. Reford & Co	69	108,583			69	108,583
3	D. Torrance & Co	43	95,883			43	95,883
4	Canada Shipping Co	29	71,173	2	1,996	31	73,169
5	Kingman Brown Co	45	41,587	3	3,248	48	44,835
6	Carbray, Routh & Co	26	28,804	1	942	27	29,746
7	J. G. Sidey	19	25,038	1	825	20	25,863
8	McLean, Kennedy & Co	15	24,100	2	796	17	24,896
9	Munderloh & Co	18	24,076			18	24,076
10	Henry Dobell & Co	30	19,946			30	19,946
11	Anderson, McKenzie Co	8	9,746	15	9,672	23	19,418
12	F. C. Henshaw & Co	18	18,041			18	18,041
13	W. Muir & Son	16	16,890			16	16,890
14	J. & R. McLea	14	16,476	3	358	17	16,834
15	Intercolonial Coal Co	15	15,639			15	15,639
16	Bossier, Frères & Co	9	14,632			9	14,632
17	Falkenberg, Duval & Co			15	11,911	15	11,911
18	Henry Dobell & Co. (Canal)	15	9,944			15	9,944
19	Brock & Co	15	7,365	15	1,209	30	8,574
20	Kingman, Brown & Co. (Canal)	8	6,285			8	6,285
21	Carbray, Routh Co. (Canal)	6	6,068			6	6,068
22	W. S. Goodhue	3	3,190	5	2,872	8	6,062
23	J. G. Sidey (Canal)	5	5,542			5	5,542
24	David Shaw	3	5,265			3	5,265
25	Wulff & Co			7	4,333	7	4,333
...	Twenty-four others	22	19,808	104	21,220	126	41,028
	Total	522	763,783	173	59,382	695	823,168

ALEX. ROBERTSON, *Secretary.*

PORT OF MONTREAL.

COMPARATIVE Statement showing the Number and Tonnage of Inland Vessels that arrived in Port the past Ten Years with the greatest number in Port at one time.

Years.	Number of Vessels.	Tonnage.	Greatest number in Port at one time.	
1880	6,489	1,044,380	253	July 7
1881	6,030	949,380	191	November 4
1882	5,947	848,780	190	September 29
1883	5,477	764,721	174	do 5
1884	4,808	726,015	161	July 9
1885	5,003	724,975	142	October 1
1886	5,521	809,819	178	August 25
1887	5,367	791,452	189	May 31
1888	5,500	863,014	163	August 14
1889	5,847	1,069,709	187	do 15

ALEX. ROBERTSON,
Secretary.

PORT OF MONTREAL.

COMPARATIVE Statement showing the dates of the Opening and Closing of of Navigation, the first arrival from Sea, and the last Departure for Sea, the past Ten Years.

Years.	Opening of Navigation.	Closing of Navigation.	First Arrival from Sea.	Last Departure for Sea.
1880	April 17	December 3	May 2	November 22
1881	do 21	January 2, 1882	April 29	do 23
1882	do 11	December 9	May 6	do 21
1883	do 27	do 16	do 5	do 20
1884	do 22	do 18	do 2	do 20
1885	May 5	do 7	do 8	do 20
1886	April 24	do 4	April 30	do 25
1887	May 1	do 23	May 3	do 28
1888	April 29	do 14	do 4	do 22
1889	do 14	do 29	April 27	do 23

ALEX. ROBERTSON,
Secretary.

CHIEF ENGINEER'S REPORT.

HARBOUR COMMISSIONERS OF MONTREAL,
CHIEF ENGINEER'S OFFICE,
MONTREAL, 14th March, 1890.

ALEXANDER ROBERTSON, Esq., Secretary,
Harbour Commissioners of Montreal.

DEAR SIR,—I beg to report as follows upon the maintenance of the buoys and beacons of the ship channel between Montreal and Quebec during the navigation season of 1889.

The maintenance of the buoys and beacons in 1889 was carried out for the Government Department of Marine by the Harbour Commissioners, under a special agreement for the year. The service was performed by the Commissioners' officers and steamers, and it was done in connection with the Montreal harbour works—that is, the officers, men and boats have been employed in either work as needed, and the expense charged to the proper account.

The placing of the buoys was commenced on 18th April, which was as soon as the clearing away of the ice permitted. Two steamers left Sorel on that day, one to place the buoys in the Contrecœur channel and the other to first set a few important buoys at the lower end of Lake St. Peter, at Becanccur and Champlain, and afterwards to place those at Cap à la Roche.

All the buoys necessary for the safe navigation of the river at the high water stage, and such as are usually first placed in the spring, were in position by the 23rd, and the greater part of the remaining buoys were placed by the 25th April.

During the summer the following additions and changes of position were made in the buoying, in order to facilitate the navigation of the 27½ foot channel. In the lower Becancour traverse the buoys were changed from the north to the south side of the channel. At the Becancour Bend the large red iron buoy was moved further down stream in order to guard the point of the shoal. At Ile Delorier an additional spar buoy was placed on the north side of the channel. On the Varennes curve an additional spar buoy was placed on the south side of the channel. An additional spar buoy was placed on the south side of the channel above Longueuil. An additional large iron buoy was placed on the south side of the channel just below Ile Ronde.

Five new steel buoys, designed to stand in the ice during winter, were made and placed instead of ordinary buoys, at the following places:—One at Pointe aux Tremble, *en haut;* one at Contrecour; one on Lake St. Peter; one at Nicolet, and one at Becancour. These were not taken up in the fall, but were left to pass the winter under the ice and be available in the spring.

The usual "balizing" of the spar buoys, to make them more easily seen in time of smoke and fog, was commenced on the 5th August and continued till the close of navigation.

The line of the dredged channel between Champlain and Pointe Citronille was slightly changed after its beacons were built, and last summer these were corrected in position, so as to range on the exact centre line of the channel as finished.

No public notice for the time of lifting the buoys in the fall was issued by the Commissioners, but immediately after the last ship had passed down the river, on 25th November, the lifting of the buoys was commenced with two steamers, and by the 27th everything was lifted and stored for the winter.

No accidents occurred to ships during the season which are traceable to the buoying.

The number of buoys in use in the channel near the close of navigation was:—

Spar buoys (wooden)	202
Can buoys (cylindrical and tapered, of steel and iron)	29
Total	231

Of these, 24 spar buoys and 8 iron and steel buoys were left to winter in their places in the river, and the remaining 199 buoys are stored at Montreal, Sorel, Three Rivers and Batiscan.

Besides these, there are in stock as surplus or spares:—

Spar buoys (wooden)	160
Can buoys (steel and iron)	13
Total	173

The cost of the service for the year is $14,860.53.

The comparison of the cost with former years is as follows:—

1884	$ 7,595 44
1885	9,732 46
1886	7,018 42
1887	13,723 84
1888	6,944 09
1889	14,860 53

Appended are abstract tables and details connected with the service.

The placing and maintenance of the buoys and beacons has, since the close of the year, been given over to the Sincennes-McNaughton Company, under contract from the Department of Marine. This service, on behalf of the navigation of the ship channel between Montreal and Quebec, has, therefore, passed out of the hands of the Harbour Commissioners, after having been performed by them and their predecessors, the Trinity Houses of Quebec and Montreal, since the passage of the Act 45 Geo. 3, chap. 12, in 1805.

Yours respectfully,

JOHN KENNEDY,

Chief Engineer.

Wm. Smith, Esq.,
Deputy Minister of Marine,
Ottawa.

TABLE showing in detail the Numbers, Localities and Description of the Buoys on the Ship Channel near the close of Navigation, 1889.

No. of Buoy.	Locality.	Colour.	Description.
10	Pointe aux Trembles, en bas	Red	Steel cylinder.
11	St. Croix	Black	do
12	Pointe Planton, below wharf	do	Large cedar spar.
13	Portneuf, Largargendiere	Red	do
14	Grondine, Batture Simon	do	Iron taper.
14A	do Horseback Shoal	Black	Steel cylinder.
15	Cadieux Shoal	do	do
16	Cape Charles, lower end	do	do
17	do	Red	do
18	do	Black	do
18A	do upper end	Red	do
18B	Pouillier Rayer	Black	do
18C	do	Red	do
19	Opposite Pouillier Rayer	Black	Large cedar spar.
19A	Pouillier Rayer	do	Steel cylinder.
19B	Cap a la Roche, curve	Red	do
20	do	Black	do
21	do	Red	Iron, bottle shaped.
22	do middle	Black	Steel cylinder.
23	do	Red	Wood barrel.
24	do upper	Black	Steel cylinder.
25	do north channel	Red	Large cedar spar.
26	Cap Levraut, Bellefeuille	Black	Steel cylinder.
27	do bend	Red	Large cedar spar.
28	Batiscan Traverse	Black	do
29	do	Red	do
30	do	Black	do
31	do	Red	do
32	do	Black	do
33	do	Red	do
33A	do	Black	do
32B	St. Pierre des Becquetts	do	do
34	Batiscan Anchorage	do	do
35	do	Red	do
36	do	Black	do
37	do	Red	do
39	do	Black	do
41	do	Red	do
42	Champlain	do	do
43	do	Black	do
44	do Dubord Shoal	do	do
45	Becancour, lower traverse	do	do
46	do do	do	do
47	do do	do	do
48	do do	do	do
49	Becancour bend	do	Steel taper.
51	do	Red	Large cedar spar.
52	Becancour, upper traverse	Black	do
53	do do	do	do
54	do do	do	do
55	do do	do	do
56	Cape Madeline	do	do
57	do	do	do
57A	Three Rivers	do	do
57B	do	do	do
57C	do	Red	do
58	do	Black	do
59	Point St. Francis, Force Shoal	Red	do
59A	Nicolet	Black	do
60	do Iron Shoal	Red	Steel taper.
60A	do Bank	Black	Large cedar spar.
61	English Bank	do	Steel cylinder.

TABLE showing in detail the Numbers, Localities and Description of the Buoys on the Ship Channel, &c.—*Continued.*

No. of Buoy.	Locality.	Colour.	Description.
61B	Nicolet Traverse	Black	Cedar spar.
62	Curve at Lightship No. 2	do	do
63	do do	do	do
64	do do	Red	do
65	do do	Black	do
66	do do	do	do
66A	do do	Red	do
67	Lightship No. 3 to White Buoy	Black	do
68	do do	do	do
69	do do	Red	do
70	do do	Black	do
71	do do	do	do
71A	do do	Red	do
72	do do	Black	do
73	do do	do	do
74	do do	Red	do
75	do do	Black	do
76	do do	do	do
76A	do do	Red	do
77	do do	Black	do
78	do do	do	do
79	do do	Red	do
80	do do	Black	do
81	do do	do	do
81A	do do	Red	do
82	do do	Black	do
83	do do	do	do
84	do do	Red	do
85	do do	Black	do
86	White Buoy, curve	do	do
86A	do do	Red	do
87	do	White and Black	Iron taper.
88	Opposite White Buoy	Red	Cedar spar.
89	White Buoy, curve	Black	do
89A	do to Lightship No. 2	Red	do
90	do do	Black	do
91	do do	do	do
92	do do	Red	do
93	do do	Black	do
94	do do	do	do
94A	do do	Red	do
95	do do	Black	do
96	do do	do	do
97	do do	Red	do
98	do do	Black	do
99	do do	do	do
99A	do do	Red	do
100	do do	Black	do
101	Curve at Lightship No. 2	do	do
101A	do	Red	do
102	do	Black	do
103	do	do	do
103A	do	Red	do
104	do	Black	do
105	Lightship No. 2 to Lightship No. 1	do	do
106	do do	do	do
107	do do	Red	do
108	do do	Black	do
109	do do	do	do
109A	do do	Red	do
110	do do	Black	do

TABLE showing in detail the Numbers, Localities and Description of the Buoys on the Ship Canal, &c.—*Continued.*

No. of Buoy.	Locality.	Colour.	Description.
111	Curve at Lightship No. 1	Black	Cedar spar.
111A	do	Red	do
112	do	Black	do
113	do	do	do
114	do	do	Steel taper.
115	Ile au Raisin Traverse	do	Cedar spar.
116	do	Red	do
117	do	Black	do
118	do	do	do
119	do	Red	do
120	do	Black	Iron, irregular shape.
120A	Ile au Raisin to Stone Island	do	Large cedar spar.
120B	do do	do	do
122	Ile de Grace	do	do
122A	do	Red	do
122B	do	do	do
122C	do	Black	do
123	Pouillier Nepigon, Sorel	do	do
124	St. Ours Traverse, Contrecœur Channel	do	Steel cylinder.
125	do do	do	Cedar spar.
126	do do	Red	do
127	do do	Black	do
128	do do	Red	do
129	do do	Black	do
130	do do	Red	do
131	do do	do	do
132	Bellmouth Curve, Contrecœur Channel	do	do
133	do do	do	do
134	do do	Black	do
135	do do	Red	do
136	do do	Black	do
137	do do	Red	do
138	do do	Black	do
139	do do	Red	do
140	Bellmouth to Bend	Black	do
141	do	Red	do
142	do	Black	do
143	Bellmouth to bend	Red	do
144	Bend, Contrecœur Channel	Black	do
145	do do	Red	do
146	do do	Black	do
147	do do	Red	do
148	do do	Black	do
149	do do	Red	do
150	Bend to Junction	Black	do
151	do	do	do
152	do	do	do
153	do	do	do
154	do	do	do
155	Junction, Contrecœur and Lavaltrie Channels.	White and Black	Steel taper.
156	Junction Curve, Contrecœur	Black	Cedar spar.
157	Lavaltrie Channel	do	Large cedar spar
158	do	do	Cedar spar.
159	do	do	do
160	do	do	do
161	do	do	do
162	do	do	Iron taper.
163	do	do	Cedar spar.
164	Bend, Lavaltrie Channel	do	do
165	Contrecœur Traverse	do	do
166	do	do	do
167	do	do	do

TABLE showing in detail the Number, Localities and Description of the Buoys on the Ship Channel, &c.—*Continued.*

No. of Buoy.	Locality.	Colour.	Description.
168	Contrecœur Traverse	Black	Cedar spar.
169	do	do	Large cedar spar.
170	Ile Bouchard	Red	do
171	Ile au Bœuf, Plum Island	Black	do
171 A	Verchères Point	do	do
171 B	do	do	do
172	do	Red	do
173	Pouillier Mayrand, Verchères	do	do
174	Pointe Marie	do	do
175	do	Black	do
176	do	Red	do
176 A	do	do	do
177	Ile Bellegarde	do	do
178	Cap St. Michel	Black	do
179	do	Red	do
179 A	Ile de Laurier	do	do
180	do	do	do
181	Varennes Curve, lower end	Black	do
182	do middle	do	do
182 A	do do	do	do
183	do upper	do	do
184	Pouillier Varennes	do	do
186	do	do	do
187	do	Red	do
188	do	Black	Steel taper.
189	do	do	Large cedar spar.
190	do	Red	do
191	do	Black	do
192	do	do	do
193	do	Red	do
194	do	Black	do
195	do	do	do
196	do	do	do
197	do	Red	do
197 A	Longue Pointe	Black	do
198	do	Red	do
199	Pouillier Gagnon, Longue Pointe	do	do
200	Longueuil	do	do
200 A	do	do	do
201	Hochelaga	Red	do
201 A	Ile Ronde	Black	Steel cylinder.
202	Montreal Harbour	do	Large cedar spar.
203	do	do	do
205	do	do	do
205 A	do	do	do
206	do	do	do

ALEX. ROBERTSON,
Secretary.

ABSTRACT Table showing number of buoys on the Ship Channel near the close of Navigation and summary of work of Maintenance for season of 1889.

LOCALITY.	NUMBER OF BUOYS.			NUMBER OF TIMES WORKED AT.						
	Wood.	Iron or Steel.	Total.	Entirely lost and replaced by another buoy.	Found lying flat and replaced by another buoy.	Found too low and replaced by another buoy.	Ballast adjusted.	Other defects corrected.	Balizee.	Total number of times worked at.
Pointe aux Trembles (*en haut*) to Three Rivers	38	19	57	3	1	6	31	54	55	260
Three Rivers to Sorel	80	5	85	9	1	46	55	43	164	467
Sorel to Montreal (including Harbour)	84	5	89	14	2	34	66	90	140	501
Totals	202	29	231	26	4	86	152	187	359	1,228

TABLE showing new Buoys placed in entirely new positions during season of 1889.

Date.	Locality.	Number of Buoy.	Colour.	Description.	Remarks.
1889.					
June 21	Ile Delaurier	1	Red	Wood	
do 21	Varennes	1	Black	do	
July 22	Pointe Marie	1	Red	do	Temporary Buoy.
Aug. 7	Montreal	1	Black	Steel	
do 7	do	1	do	do	

TABLE showing the Number and Localities of the Beacons for marking the Ship Channel at the close of Navigation, 1889.

Locality.	No.	Description.	Remarks.
St. Antoine	1	Square	Left in position throughout the year
Horseback Shoal	2	Diamond	do do
Grondines Pointe	2	Blind Lights	do do
Grondines	2	Square	do do
Champlain	2	do	do do
Cap de la Madeleine—Old Channel	2	Cylindrical	do do
Cap de la Madeleine—New Channel	2	Square	do do
Nicolet Traverse	2	do	do do
Ste. Anne de Sorel	1	Diamond	do do
Contrecœur—Lower Pair	2	Square	do do
Contrecœur—Upper Pair	2	Diamond	do do
Contrecœur—Ile St. Ours	2	do	do do
Ile de Laurier	2	do	Removed every fall.
Ile à l'Aigle	2	do	do
Total	26		

ABSTRACT of Steamers' time employed in the Maintenance of Buoys and Beacons during the Season of 1889.

Month.	Time of Service.			Remarks.
	Buoys.	Beacons.	Totals.	
	Days.	Days.	Days.	
April	17	..	17	Commenced placing Buoys April 18th.
May	19	2	21	
June	10¼	3	13¼	
July	9¼	6	15¼	
August	11¼	1	12¼	
September	11	1½	12½	
October	4	½	4½	
November	18¾	.....	18¾	Finished taking up Buoys November 27th.
Totals	110½	14	114½	

STEAMERS Employed in the Maintenance of Buoys and Beacons during Season of 1889 and Time of Service of each.

Name of Steamer.	Time of Service.			Remarks.
	Buoys.	Beacons.	Totals.	
	Days.	Days.	Days.	
McNaughton	90	14	104	Working season from April 18th to November 30th, 195 days, not including Sundays.
St. Peter	4¾	.....	4¾	
St. Louis	5¾	.....	5¾	
Totals	100½	14	114½	

APPENDIX No. 4.

QUEBEC HARBOUR COMMISSIONERS' REPORT FOR THE YEAR 1889.

QUEBEC, 14th January, 1890.

SIR,—I have the honour to transmit you herewith the Commissioners' report, in duplicate, with its annexures, for the year 1889, prepared in conformity with the requirements of the 38 Victoria, chapter 55, section 14, as also a complete statement of the Commissioners' accounts for the same year.

In consequence of the illness of our Chief Engineer, Mr. Perley, I am compelled to omit his report on the harbour works. I will forward it as soon as it will be in my hands.

I have the honour to be, Sir,

Your obedient servant,

A. H. VERRET,

Secretary-Treasurer.

WM. SMITH, Esq.,
Deputy Minister of Marine,
Ottawa.

QUEBEC HARBOUR COMMISSIONERS' REPORT FOR THE YEAR 1889.

(Under 38 Victoria, Chapter 55, Section 14.)

QUEBEC, 2nd January, 1890.

To the Honourable
CHAS. H. TUPPER,
Minister of Marine and Fisheries,
&c., &c., &c.,
Ottawa.

SIR,—In conformity with the requirements of 38th Victoria, chapter 55, section 14, I have the honour to report as follows on the doings of the Quebec Harbour Commissioners for the year 1889.

CHIEF ENGINEER'S REPORT.

The annexed report from the Chief Engineer, Mr. Henry F. Perley, conveys all the information in relation to the harbour works under his charge for last year.

Although this year has seen the completion of the harbour works which were under contract, it will be necessary to improve a portion of Pointe-à-Carcy wharf, facing the Tidal Basin, in order to obtain in the whole basin a uniform depth of 27 feet at low water. The Commissioners have, for that purpose, instructed their Chief Engineer to prepare a plan, with specifications and estimate, of this contemplated improvement.

GRAVING DOCK.

The Commissioners have continued to manage the Graving Dock, under the control of the Public Works Department.

Three vessels have used the dock during the season of navigation, viz.:—

The first, SS. "Polynesian," 3,983 tons gross.
The second, SS. "Deddington," 2,124 do
The third, SS. "Canopus," 2,802 do

The "Polynesian" was docked the 28th May, and undocked the 26th August.
The "Deddington" was docked the 27th August, and left the 13th October.
The "Canopus" came in the 25th October, and was undocked the 7th November.

An agreement has been made with the Richelieu and Ontario Navigation Company for the docking of their boat "Quebec" during the winter, and this vessel has taken possession of the berth the 24th November.

This valuable property of the Government has been kept in the best condition, and has given entire satisfaction to those who had charge of the vessels which have used it. In order to protect the vessels against fire, the first-class force pump in the engine house has been supplied with 1,000 feet of hose.

Dredging.

The following quantities have been dredged, during the working season, under the contract of the 23rd May, 1887:—86,688 cubic yards, at a depth of 26 feet below low water mark; 690 cubic yards, from 26 to 28 feet; and 9,252 cubic yards of bottoming in the Tidal Basin.

South Wall, Harbour Works.

The last portion of the Wet Dock, the south wall, was completed early in November, with the exception of a certain quantity of dredging which will have to be done to bring the bottom to a uniform depth. The cost of the land, which had to be appropriated in connection with this work has been settled.

Louise Embankment and Basins.

The additional railway siding accommodation on the north side of the Embankment, alluded to in last report, has been open to the traffic early in the spring. It has proved to be most beneficial to the unloading of lumber and deals from cars into batteaux and barges.

A large Fairbanks scales, capable of weighing fifty tons, has been erected on the Embankment, for the special accommodation of the coals and other heavy goods forwarded by cars.

In order to facilitate the loading of cars an elevated platform has also been erected on the Embankment.

At an interview held on the 27th May with the shippers and mill-owners interested in the shipping of goods in the Louise Basin, it has been agreed upon that the railway track on the south side of the Embankment, next the water, would be kept clear of all description of goods during the shipping season, to enable the shipments to be made direct from cars to steamships. Regulations to that effect have been made and have given general satisfaction, although on some occasions the circulation has been temporarily intercepted through incumbrance caused by the accumulation of coals.

The completion of the Wet Dock, which will be available next season, will considerably improve and increase the facilities for loading and unloading goods.

In order to ascertain whether large steamers of the size of those intended to be subsidized for carrying the mails could enter the Tidal Basin through its present entrance, the Commissioners have addressed to that effect a letter to the Harbour Master and to the Directors of the Corporation of Pilots, with a request to convey their suggestions as to what might be done to meet the emergency, in case they would see objections to the same. The answers received were similar, both authorities declaring that they were of opinion that the vessels in question could, without any difficulty whatever, go in and out of the basin through its present entrance.

Although this opinion is of a great weight, it has not been accepted as decisive, and it is possible that the matter will be considered *de novo* when it will become necessary to take a definite action.

On the 19th August a deputation of the Quebec Board of Trade waited on the Commissioners for the purpose of urging the necessity of affording facilities in the shape of sheds for the landing on the Embankment, of perishable goods specially, and others.

Subsequently the Commissioners were invited to accompany the members of this Board on a visit to the Embankment in order to select a suitable spot for the erection of the proposed shed. The visitors were unanimous in selecting a spot on the north end of the cross-wall.

The plans, with specifications and estimate, of the shed, have been prepared and are under consideration. There cannot be any doubt that the project will be carried out.

Draw Bridge.

The construction and erection in the place of the draw bridge across the entrance to Wet Dock harbour works has been completed.

Dredging of the Fly Bank Channel.

The dredging of the Fly Bank channel is considered now as completed, the bottoming of a very small portion having to be done, which will necessitate only a few days work, if, however, it is judged necessary to have it done.

The quantity of material so dredged this year amounts to 66,283 cubic yards, which, added to the 66,811 cubic yards previously dredged, gives a total of 133,094 cubic yards.

Lease to the Grand Trunk Railway Company.

The lease of the premises occupied by the Grand Trunk Railway expiring on the 1st May, and the Commissioners being aware that the space occupied by them was not sufficient for their winter traffic especially, a proposal was made to the company for a renewal of the existing lease with, in addition, the grant of the use of the whole front of Wellington Wharf adjoining their premises, together with the portion of its surface which was occupied by Mr. John Baile.

The proposal having been favourably considered, a lease for five years has accordingly been drawn up and signed. It stipulated in same that permission is given to the company to erect whatever buildings they may require, in the shape of freight sheds of similar description to the addition which had been recently made to their existing shed.

Coal Shed on Wellington Wharf.

In consequence of the agreement made with the Grand Trunk authorities, Mr. John Baile has been deprived of the portion of Wellington Wharf which he had occupied for years. At his request a coal shed has been erected on a vacant lot in rear of the wharf. Its dimensions are as follows: 136 feet in length, 30 feet in width and 12 feet in height. Mr. Baile has taken a lease of same for a term of three years.

Repairs to Property.

The Pointe-à-Carcy and East India wharves are still in great need of repairs. As soon as they will have the means to do so the Commissioners intend to rebuild those two wharves from low water mark to the level of Atkinson's wharf, and to a depth of about fifty feet.

The remainder of the property under the control of the Commissioners is in the best state of order.

The railway track on Pointe-à-Carcy wharf has been raised, ballasted and supplied with ties.

Two thousand one hundred and forty-five tons of stone, 295 tons of sand and 275 tons of iron and copper dross, all consisting in ballast taken from ships, and 1,240 tons of rubbish, secured from the demolition of the St. John street houses, have been dumped, during the year, into Pointe-à-Carcy Wharf.

Two thousand eight hundred and twenty-five tons of stone, 150 tons of stone and rubbish, and 165 tons of sand and stone, all consisting also in ballast taken from ships, have been dumped into Wellington Wharf.

Considerable repairs have been made to Wellington Wharf previous to its surrender to the Grand Trunk authorities. It has been raised to the level of the adjoining wharf, the whole front has been lined with timber, and its filling up to coping level has been completed.

Seven hundred and fifty-eight tons of stone and rubbish, secured from ships in ballast, have been dumped into the Grand Trunk Wharf, and 80 tons stone from the same source were unloaded on the breakwater, for the purpose of filling a hole at its north end.

Trial.

The master of the barque "Melmerby" was tried the 26th June for having refused and neglected to obey the directions of the Harbour Master, who had ordered him to haul his ship astern. The charge was easily proved, and the master was admonished and condemned to pay the costs, no fine having been set upon him, in consideration of the promise that he would immediately obey the directions in question, and in consideration also of the expression of his regret at having refused to obey same.

Ice Cutting.

Twenty-eight thousand seven hundred and seventy-four blocks of ice, all for local use, have been cut during the winter 1888–89, a difference, in excess, of 2,449 in the harvest of the previous year.

To this report are annexed the various statements conveying the information yearly furnished to your Department in connection with the harbour, as also a complete statement of the Commissioners' accounts for the year.

I have the honour to be, Sir,

Your most obedient servant,

A. H. VERRET,

Secretary-Treasurer.

QUEBEC HARBOUR COMMISSION.

Comparative Statement of the Revenue of the Commissioners, for the Year 1888 and 1889.

—	1888.	1889.	Difference in 1889.	
Tonnage dues	14,691 77	16,739 96	2,048 19	Increase.
Import do	3,012 76	3,278 97	266 21	do
Export do	5,106 70	6,493 61	1,386 91	do
Harbor do	2,619 27	2,415 09	204 18	Decrease.
Property—				
Receipts	24,720 70	23,919 63	801 07	do
Interest	1,023 82	508 61	515 21	do
B. & D. W. lots	1,977 37	1,977 37	.....	
Sundries	305 75	636 83	331 08	Increase.
	53,458 14	55,970 07	2,511 93	Increase.

REVENUE AND EXPENDITURE.

Dr.				Cr.			
1889.		$ cts.	$ cts.	1889.		$ cts.	$ cts.
Dec. 31.	To Tonnage Dues	16,739 96		Dec. 31.	By Officers' salaries	6,900 00	
	Import do	3,278 97			Reporters' do	775 00	
	Export do	6,493 61			Commissioners' attendance	2,340 00	
	Harbour do	2,415 09			Legal expenditure	679 79	
	Property receipts	23,919 63			Property do	9,401 80	
	Beach and deep water lots	1,977 37			Report and annexures, 1889-90	763 50	
	Interest	501 61			Auditors for 1888	200 00	
	Sundries	636 83			Heating apparatus	401 50	
					Harbour-master's expenses	683 85	
					Sundries	1,518 67	
					Interest	28,920 00	
					Profit and loss	3,385 96	
			55,970 07				55,970 07

JAS. WOODS,
Bookkeeper.

A. H. VERRET,
Secretary-Treasurer.

QUEBEC.

DR. STATEMENT of Assets and Liabilities per Balance Sheet of date. CR.

1889.	ASSETS.	$ cts.	$ cts.	1889.	LIABILITIES.	$ cts.	$ cts.
Dec. 31	Real Estate :—			Dec. 31	Quebec Harbour debentures	3,425,900 00	
	Breakwater wharf	220,498 63			Receiver General	14,460 00	
	Point-à-Carey do	276,085 31			Dominion Government—Harbour improvements	14,500 00	
	East India do	48,537 99			Steamer "Quebec"	200 00	
	Grand Trunk do	15,604 07			Corporation for taxes	1,975 28	
	Wellington do	86,522 95					3,457,035 28
	Atkinson's do	51,080 70			SURPLUS.		
	Reynar's do	9,918 29					
			708,247 94		Composed as follows :—		
	In re Beach and Deep Water Lots :—				Beach and deep water lots	54,706 31	
	Capital at debit sundries	35,162 54			Profit and loss	225,597 55	
	Arrears of interest to 24th June, 1889	7,221 46					280,303 86
	do do 24th Dec., 1889	988 68					
			43,372 68				
	Rents, Wharfage, &c. :—						
	Due by Fund as per Balance Sheet	9,713 67					
	Rents accrued, but not due	1,637 46					
			11,351 13				
	Cash :—						
	On hand	17 91					
	In La Banque Nationale	27,212 39					
			27,230 30				
	Harbour Improvements		2,932,769 92				
	Graving Dock—Revenue		9,002 93				
	Jackscrews—On hand		394 87				
	Tools—On hand		1,503 80				
	Office furniture		3,463 57				
			3,737,339 14				3,737,339 14

JAS. WOODS, *Book-keeper.* A. H. VERRET, *Secretary Treasurer.*

We hereby certify that we have examined the statement of Assets and Liabilities of the Quebec Harbour Commission on 31st December, 1889, and that we have found the same correct.

QUEBEC, 13th January, 1890.

A. GABOURY, }
A. AHERN, } *Auditors.*

DR. BALANCE SHEET of 31st December, 1889. CR.

1889.		$ cts.	$ cts.	1889.		$ cts.	$ cts.
Dec. 31.	To Office furniture		3,465 57	Dec. 31	By Beach and deep water lots		54,706 31
	Amount at debit grantees, beach and deep water lots		42,384 00		Receiver-General		14,460 00
	Amount at debit sundries for rents, wharfage, &c		9,713 67		Taxes account		1,975 28
	Breakwater wharf		220,498 63		Steamer "Quebec"		200 00
	Point-à-Carey do		276,085 31		Dominion Government harbour improvements		14,500 00
	East India do		48,537 99		Quebec Harbour Debentures		3,425,900 00
	Grand Trunk do		15,604 07		Profit and loss		225,597 55
	Wellington do		86,522 95				
	Atkinson's do		51,080 70				
	Reynar's do		9,918 29				
	Harbour improvements		2,932,769 92				
	Cash	17 91					
	La Banque Nationale	27,212 39					
			27,230 30				
	Jackscrews account		394 87				
	Tools account		1,503 80				
	Graving Dock revenue		9,002 93				
	Suspense account		2,626 14				
			3,737,339 14				3,737,339 14

A. H. VERRET,
Secretary-Treasurer.

JAS. WOODS,
Book-keeper.

We hereby certify that we have examined the books and vouchers of the Quebec Harbour Commissioners for the year ending 31st December, 1889, and that the above is a correct copy of the Balance Sheet.

A. GABOURY,
A. AHERN, } *Auditors.*

QUEBEC, 13th January, 1890.

QUEBEC HARBOUR COMMISSION.

STATEMENT showing the Cost of the Quebec Harbour Works up to the 31st December, 1889.

Nature of Works.	Total Expenditure including Interest, &c.	Reduction effected under 51 Vic., ch. 6, representing Interest and Sinking Fund paid out of Capital.	Amount of Harbour Commissioners Sinking Fund and accumulations which by 51 Vic., ch. 6, has become part of Con. Rev. of Canada.	Net Reduction	Net Cost of Works to Date.	Total Amount received from Federal Government	Total Amount Voted.	Designation of Statutes authorizing Expenditure.	Amount available.	Remarks.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.		$ cts.	
Harbour improvements.....	3,087,510 74	*378,670 05 †17,329 95 396,000 00	223,929 23	*154,740 82 †17,329 95 172,070 77	2,932,769 92	2,717,400 00	3,252,000 00	36 Vic., c. 62 43 Vic., c. 17 45 Vic., c. 47 47 Vic., c. 9. 49 Vic., c. 19 50-51 Vic., c. 41.	534,600 00	If the amount of $396,000 deducted from the debt under the 50-51 Vic., ch. 62, is taken the sum of $534,600 indicated as available, then the amount would be reduced to $138,600. The debt of the Commission, amounting to $723,000, redeemed under 36 Vic., ch. 62, is not included in this statement.

* Interest. † Sinking Fund.

HARBOUR COMMISSIONERS OFFICE,
OTTAWA, 2nd January, 1890.

Certified,
A. H. VERRET,
Secretary-Treasurer.

APPENDIX No. 5.

REPORT OF THE HARBOUR COMMISSIONERS OF THREE RIVERS FOR THE CALENDAR YEAR ENDED 31st DECEMBER, 1889.

SECRETARY'S OFFICE,
THREE RIVERS, 5th February, 1890.

SIR,—I have the honour, by the direction of the Harbour Commissioners of Three Rivers, to forward herewith, for the information of the Honourable the Minister of Marine, statements of Receipts and Disbursements of the Commission for the year ended 31st December, 1889; also a comparative statement of trade and navigation of the port during the same year.

I have the honour to be, Sir,

Your obedient servant,

GEORGE BALCER,

Secretary.

WM. SMITH, Esq.,
Deputy Minister of Marine,
Ottawa.

RECEIPTS.

The Receipts were as follows, viz. :—

FROM THE COLLECTOR OF CUSTOMS, THREE RIVERS.

Harbour dues on goods, inwards	$491 56	
do do outwards	567 94	
Tonnage dues on vessels	592 04	
Moorage dues	103 35	
		$1,754 89

LOCAL TRAFFIC.

Harbour dues on goods, inwards	$293 76	
do do outwards	534 99	
Tonnage dues on vessels	271 81	
Commutation on goods and vessels	994 74	
Rent of wharf and moorage	864 41	
		$2,959 71
Total Receipts		4,714 60

DISBURSEMENTS.

The Expenditure was as follows :—

Salaries of officers	$1,511 34	
Rent, fuel, office expenses, sundries	646 75	
Printing expenses	37 75	
Travelling do	40 50	
Collection refunded	56 54	

CONSTRUCTION ACCOUNT.

Repairs on wharf properties	397 40	
Total Expenditure		$2,690 28

Balance Sheet.

Dr. Cr.

1889.		$ cts.	$ cts.	$ cts.	1889.		$ cts.	$ cts.	$ cts.
Jan. 1.	Deposit in Bank	1,705 54			Dec. 31	Expenses for administration	2,236 34		
	Cash on hand	29 52				Harbour dues refunded	56 54		
			1,735 06					2,292 88	
Dec. 31.	Harbour dues collected during 1889		4,714 60			Expenses for harbour works		397 40	
						Amount at credit		544 48	
	Amount at debit :					Deposit in Bank	3,540 94		
	Parties for rent of wharf	333 33				Cash on hand	218 44		
	do harbour dues	211 15						3,759 38	
			544 48						
				6,994 14					6,994 14

STATEMENT of the Number and Tonnage of Sailing Vessels and Steamers entered Inwards and Outwards at the Custom House, at Three Rivers, for the Year ending 1889.

Return of Vessels Inwards.			Return of Vessels Outwards.		
	No.	Tonnage.		No.	Tonnage.
Total of vessels arrived	31	28,998	Total of vessels cleared	31	28,998
Number of steamers	15	17,760	Number of steamers	15	17,760
do sailing vessels	16	11,238	do sailing vessels	16	11,238
Nationality.			**Nationality.**		
British and Canadian { Steamers	13	14,052	British and Canadian	21	18,445
British and Canadian { Sailing vessels	8	4,393	Scandinavian	7	6,208
Scandinavian, sailing vessels	7	6,208	French	2	3,708
French, steamers	2	3,708	Argentine Republic	1	637
Argentine Republic, sailing vessel	1	637			
Sailing from			**Sailing for**		
Canadian ports	18	17,846	British Ports	15	17,338
French do	2	2,847	Canadian do	8	8,707
English do	3	2,653	South American Ports	5	2,541
South American ports	4	2,595	Newfoundland do	3	412
Belgian do	1	2,099			
Scandinavian do	1	958			

LOCAL TRAFFIC.

	Number.	Tonnage.
Bateaux, not registered	241	
Schooners	29	2,584
Barges	81	8,447
Steamboats	190	20,911
American Barges	45	4,406
Vessels wintering over	34	2,345
	620	38,693

Richelieu and Ontario Company's steamers and local boats not included.

COMPARATIVE STATEMENT OF EXPORTS AND IMPORTS DURING THE YEAR 1889.

The total amount of lumber shipped during the season of 1889 was 42,778,000 feet, B.M.—about the same as in 1888. The movement in our staple article of export thus remained stationery: in other words, it remained at a reduced figure compared with former years.

The trade with Great Britain was somewhat more active in 1889; the quantity shipped to that country being 14,857,000 feet, B.M., as against 9,370,000 feet in 1888. Still, it amounts to much less than the trade of 1887, in which year 23,750,000 feet, B.M., were shipped direct to English ports.

Our commerce with South America has, to a certain extent, been resumed, and 2,143,000 feet, B.M., of lumber, were shipped to the Argentine Republic, as against *Nil* last year.

To the United States 18,366,000 feet, B.M., of lumber were shipped, as against 19,500,000 feet in 1888. Thus, on the whole, but very little difference exists in the total figures of our lumber trade exports for the last two years, and we have once more to deplore the gradual decline in this the shipment of our principal item of export.

Such a decline in our lumber trade as we have mentioned on former occasions is not merely due to the general condition of this business, nor to the gradual reduction in the produce of our timber forests. We have to account for it by the absence of proper shipping facilities in our harbour. For the limited and insufficient state of our wharf accommodation, which, with the exception of the Commissioners' wharf, is scarcely sufficient to accommodate our local trade. The want of the necessary space for piling and sorting the lumber are forcing the merchants and shippers to send the produce of the saw mills in the district of Three Rivers by lighters to Quebec, and even to Montreal, for transhipment into sea-going vessels, instead of shipping direct from our port, as in former years, and as both producers and shippers intended to do when the Harbour Commission was established, and hopes were entertained that Three Rivers would prove to be the nearest and most suitable and economical port for the shipment of sawn lumber. As for the importance of such establishments, we only mention that the River Nicolet alone produces annually from 25,000,000 to 30,000,000 feet, the Batiscan and Ste. Anne about 20,000,000 feet, the Rivière du Loup, the Yamachiche, the Becancour, the Maskinongé and some establishments along the line of railway turn out a very large quantity all told, without alluding to Ottawa lumber, the shipment of a portion of which from Three Rivers has been entertained for years, and is still entertained by some of the most prominent firms in the lumber export trade.

Another proof that the decline in this trade is not due to a lack of enterprise on the part of our citizens is to be found in the gradual, but steady, increase in all other branches of our export trade.

Disappointed in their expectations to receive from the often-promised harbour improvements the now necessary facilities for the carrying on and extension of the lumber shipping trade, the attention of parties interested in this business was directed to other quarters. Consequently, we find that, while the business relations with England and other European countries remained almost unchanged, a larger development was given to American and interprovincial commerce. This will also account for the absence of increase in the total tonnage of sea-going vessels at our port.

During the last decade a continual increase is noticed in the volume of our commercial transactions. In 1880 the aggregate volume of our trade amounted to a little over $600,000. In 1889 it reached the total figure of $1,023,692, divided as follows:—

Exports	$843,450
Imports	180,242

The exports are divided as follows:—

To the United States.

	Value.	
30,261 tons hay	$276,474	
9,914 sheep	22,835	
36 horses	4,666	
30,573 dozen eggs	4,819	
Other produce of field and farms	3,469	
18,366,407 feet, B.M., lumber	178,594	
11,350,000 shingles	24,581	
Railroad ties	8,040	
Telegraph poles	6,000	
Other wood goods	5,836	
504 cords hemlock bark	2,496	
Pulp wood	4,507	
Wood pulp (manufactured)	16,891	
Furs and skins	6,903	
55 tons oxide of iron	1,083	
Miscellaneous	9,466	
		$576,660

To Great Britain.

7,735,750 feet, B.M., pine deals	$130,348	
6,561,500 do spruce "	61,216	
380,500 do deal ends	6,204	
180,000 do boards	2,736	
153 tons square birch	981	
Furs	250	
		$201,735

To Newfoundland.

Machinery	$ 15,500	
Provisions	6,600	
General merchandise	1,500	
Twenty horses	2,500	
Lumber	2,000	
Shanty rigging	6,800	
		$ 34,900

To South America.

2,143,000 feet, B.M., lumber	$ 24,187	
104,000 scantling	1,051	
50,000 palings	521	
		$ 25,759

To Germany.

Furs	4,396
Total exports	$843,450

The imports were as follows:—

From the United States.

	Value.	
Flour and provisions	$19,881	
Molasses	5,040	
2,895 tons coal and coke	11,150	
149 do pig iron	2,517	
Moulding sand, clay, &c	704	
Leather and leather goods	9,539	
Hides and furs	4,808	
Machinery, tools, &c	3,018	
Hardware	525	
Brass, and manufactures of brass	1,616	
Platina, silver, etc., manufactures of	1,389	
Woollen and cotton goods	2,642	
India rubber goods, etc	791	
Manufactures of wood, furniture	2,418	
Musical instruments	136	
Glassware	604	
Books and prints	780	
Acids and drugs	977	
Tobacco	702	
Toilet articles	215	
Wall paper	144	
Grindstones	511	
Rosin	303	
Packages by mail	1,382	
Miscellaneous	12,104	
		$83,896

From Great Britain.

Woollen and cotton goods	$18,960	
Dry and fancy do	2,625	
Hosiery and small wares	1,991	
India rubber goods, etc	910	
Hats and caps	298	
Hides and furs	5,407	
Leather	1,243	
Coals (448 tons)	827	
Cement	182	
		32,443

From the Lower Provinces.

9,695 tons coal	26,660

From Belgium.

Machinery, tools, etc	$14,750	
Household furniture, etc	3,400	
Books	20	
		18,170

From France.

	Value.	
Books and stationery	$1,367	
Church ornaments, beads	242	
Leather	120	
Millstones	495	
Glassware	138	
Fancy goods	161	
Sundries	83	
541 gallons brandy	899	
1,456 do wine	701	
Settlers' effects, furniture	2,600	
		6,806

From Germany.

Furs	$3,037	
Leather	2,469	
Silk and woollen goods	428	
Machinery	215	
Fancy goods	236	
Champagne	106	
Plants	29	
		6,520

From Holland.

8,334 gallons gin	4,773

From Spain.

1,377 gallons wine	701

From Austria.

Leather	195

From Italy.

Church ornaments	39

From Switzerland.

Watches and watch movements	39
Total imports	$180,242

RECAPITULATION.

Exports.

	1888.	1889.
To the United States	$595,925	$576,660
Great Britain	125,412	201,735
Newfoundland	.....	34,900
South America	.....	25,759
Germany	2,042	4,396
	$723,379	$843,450

Imports.

	1888.	1889.
From the United States	$78,074	$83,896
Great Britain	20,338	32,443
Lower Provinces	20,273	26,660
Belgium	1,163	18,170
France	3,529	6,806
Germany	3,557	6,520
Holland	2,828	4,773
Spain	749	701
Austria	279	195
Italy	39	39
Switzerland	...	39
	$130,829	$180,242
Total Exports	$723,379	$843,450
" Imports	130,829	180,242
	$854,208	1,023,692
		854,208
Increase for 1889		$169,484

The local and interprovincial trade, of which no precise figures could be obtained, is represented by the carrying outwards by railway lines and river steamers of 24,884 tons of general merchandise, and by receipts through the same channels of 31,918 tons, a total of 56,802 tons, to which must be added the freight carried by some 350 barges and other river craft.

I have the honour to be, Sir,
Your obedient servant,
GEORGE BALCER,
Secretary Three Rivers Harbour Commissioners.

WM. SMITH, Esq.,
Deputy Minister of Marine,
Ottawa.

APPENDIX No. 6.

REPORT OF THE HARBOUR COMMISSIONERS OF TORONTO FOR THE CALENDAR YEAR ENDING 31ST DECEMBER, 1889.

Toronto Harbour.

Secretary of the Toronto Harbour Trust in Account with the Commissioners for 1889.

GENERAL BALANCE SHEET.

Dr.				Cr.			
1889.			$ cts.	1889.			$ cts.
Dec. 31	Wharf property		43,072 02	Dec. 31	By Overdraft at bank		5,346 04
do 31	Elevator		10,250 00	do 31	Profit and loss		48,820 59
do 31	Office furniture		839 71				
do 31	Cash on hand		4 90				
			54,166 63				54,166 63

Having examined the books, accounts and vouchers, and having compared the balance sheet as above with the books, &c., we certify the same to be correct, and to represent a true statement of the affairs of the Trust to 31st December, 1889.

MORGAN BALDWIN,
Harbour Master.

C. W. POSTLETHWAITE,
Deputy Harbour Master.

ARTHUR B. LEE, Chairman.
A. M. SMITH.
J. H. G. HAGARTY,
J. McMILLAN,
THOMAS DAVIS,
Commissioners.

JAS. E. DAY,
C. B. GRASETT,
Auditors.

Toronto, 5th January, 1890.

STATEMENT of Receipts and Expenditure of the Toronto Harbour Trust for the Year 1889.

1889.	RECEIPTS.	$ cts.	1889.	EXPENDITURE.	$ cts.
Jan. 1	Cash on hand	1 16	Jan. 1	Overdraft at Bank of Toronto.	1,731 21
Dec. 31	Toronto, Grey & Bruce Ry.	3,000 00	Dec. 31	Dredging	12,740 17
do 31	Harbour dues for year	10,545 95	do 31	Salaries	2,600 00
do 31	Fines	20 00	do 31	Office expenses	600 02
do 31	Rents	48 00	do 31	Charges	400 00
do 31	Overdraft at bank	5,346 04	do 31	Lights, buoys and beacons	293 33
			do 31	Interest on overdraft	215 45
			do 31	Insurance	143 00
			do 31	Printing and stationery	53 28
			do 31	Coal and wood	31 15
			do 31	Engineers' fees	25 00
			do 31	Solicitors' fees	13 59
			do 31	Cash on hand	4 90
			do 31	Expenditure on account of property	110 05
		18,961 15			18,961 15

Examined and found correct.

JAS. E. DAY,
C. B. GRASETT,
Auditors.

TORONTO, 5th January, 1890.

STATEMENT OF ACCOUNTS IN DETAIL.

1889.		Office Furniture.	$ cts.	$ cts.
Dec.	31	Amount as per ledger		839 71
		Property Account.		
Jan.	31	Amount as per ledger	42,961 97	
Feb.	20	Plans and report on metes and bounds	50 00	
Aug.	22	New fence at lighthouse-keeper's house	60 05	
				43,072 02
		Interest.		
Dec.	31	Interest on overdraft at Bank of Toronto		215 45
		Insurance.		
Jan.	21	Premium on lighthouse	8 00	
July	30	do elevator	130 00	
Dec.	31	do office furniture, 2 years	5 00	
				143 00
		Dredging.		
Oct.	3	J. Conlon, as per contract	11,980 00	
do	3	Kivas Tully, engineers' fees	613 67	
do	3	G. Shaw, check clerk	138 00	
June	30	Solicitor's account for preparing contract	8 50	
				12,740 17
		Charges.		
Jan.	12	Commissioners' and auditors' fees, &c		400 00
		Printing and Stationery.		
Feb.	11	*Mail* account for printing annual statement	17 50	
April	9	Copp, Clark & Co., for 2,000 envelopes	5 50	
May	27	*Mail* account for 250 half-sheet posters	6 00	
June	18	Copp, Clark & Co., for letter paper	4 50	
Oct.	3	*Mail* printing account for 2,000 manifests	9 50	
Dec.	31	Petty cash account, postage, &c	10 28	
				53 28
		Salaries.		
Dec.	31	M. Baldwin	1,200 00	
do	31	C. W. Postlethwaite	800 00	
do	31	Captain Taylor	600 00	
				2,600 00
		Lights, Buoys and Beacons.		
April	9	Captain Taylor, placing and painting buoys	32 50	
do	9	J. B. Allan & Co., paint	12 31	
do	9	F. Jackman, placing buoys per contract	62 50	
May	25	Captain Taylor, painting house at Queen's Wharf	41 00	
do	25	J. B. Allan & Co., paint	24 92	
Oct.	3	Captain Taylor, painting fence	10 25	
do	3	J. B. Allan & Co., paint	8 49	
Dec.	12	F. Jackman, lifting buoys per contract	78 50	
do	30	Gas for lighthouses	134 11	
do	31	Petty cash	8 75	
				413 33

STATEMENT OF ACCOUNTS IN DETAL—*Concluded.*

				$ cts.	$ cts.
			COAL AND WOOD.		
Jan.	14	Ontario Coal Co.,	1 ton coal	6 00	
April	9	do	½ cord pine	2 75	
do	9	do	1 ton coal	6 00	
Oct.	2	do	1 do	5 50	
do	2	do	1 do	5 50	
do	12	do	½ cord pine	2 50	
do	14	do	½ ton coal	2 90	
					31 15
			OFFICE EXPENSES.		
Dec.	31	Rent for year		399 96	
do	31	Rent of telephone for year		100 00	
Oct.	3	Wm. Booth, painting sign		12 00	
Dec.	4	W. H. Ferguson, drawing plans		5 30	
do	24	W. J. Whitten & Co., fitting stoves, &c		4 90	
		Cleaning, washing and water account		77 86	
					602 02
			ELEVATOR.		
Dec.	31	Account as per ledger			10,250 00

PROFIT AND LOSS.

Dr. Cr.

1889.	$ cts.	1889.	$ cts.
Dredging	12,740 17	Balance per ledger, folio 397	52,321 63
Salaries	2,600 00	Harbour dues for year	10,545 95
Office expenses	600 02	Toronto, Grey and Bruce Railway	3,000 00
Charges	400 00	Rents	48 00
Lights, buoys and beacons	293 33	Fines	20 00
Interest	215 45		
Insurance	143 00		
Printing and stationery	53 28		
Engineer's fees	25 00		
Solicitors' fees	13 59		
Coal and wood	31 15		
Balance to credit of profit and loss	48,820 59		
	65,935 58		65,935 58

Examined and found correct.

JAS. E. DAY,
C. B. GRASETT,
Auditors.

Toronto, 5th January, 1890.

COMARATIVE STATEMENT.

Goods arrived per Seamer and Vessel for the Years 1888 and 1889.

Description of Goods.		1888.	1889.
General merchandise	Tons.	10,931½	11,427¼
Coal	do	177,429	166,316
Sheep, &c.		2	20
Horses and horned cattle		516	392
Grain and pulse	Bush.	186,160	148,190
Building stone	Tons.	9,365	7,096
Building sand	do	525	584
Laths and hoops		315,000	189,000
Wood	Cords.	300	725
Stone	Toise.	3,453	3,447
Fruit	Bbls.	9,876	10,065
do	Boxes.	18,536	3,825
do	Baskets.	116,138	111,768
do	Bags.	1,025	440
Lumber	Feet, B.M.	470,100	1,005,500
Bricks			47,000

C. W. POSTLETHWAITE,
Deputy Harbour Master.

Harbour Master's Office,
Toronto, 5th January, 1890.

THIRTY-NINTH ANNUAL REPORT.

To the Commissioners of the Harbour of Toronto:

GENTLEMEN,—I have the honour to lay before you my Annual Report for the year 1889.

The ice left the Bay on the 15th of March, twenty-seven days earlier than last year.

The first arrival was the schooner "Morning Star," from Port Credit, with stone, on the 23rd March, Thomas Blowns, Master, who got the customary hat. The last arrival was the steamer "Lillie," from Niagara, Capt. Thompson, on the 24th December; this steamer ran to the Island on Christmas Day. The weather so far this winter has been exceptionally mild, and with the exception of the 3rd and 4th of December, when the lowest reading of the thermometer was plus 6 and plus 3 respectively, there has never at any time been more than a few degrees of frost.

The number of arrivals of vessels at this Port was 2,313, a decrease of 13 as compared with last year.

	1888.	1889.		
Steamers, loaded.....	798	961	Increase.....	163
do light.....	7	5	Decrease.....	2
Propellers, loaded.....	71	79	Increase.....	8
do light.....	96	105	do	9
Schooners, loaded.....	1,314	1,117	Decrease.....	197
do light.....	40	46	Increase.....	6

The number of vessels wintering in this Harbour is 70, viz.: 24 schooners, 18 steamers, including tugs and ferries, 7 propellers, and 21 steam and sailing yachts, the aggregate tonnage of which will amount to about 10,755 tons.

We began the year with a debit balance of $1,731.21. The receipts for harbour dues were $10,545.95, cash on hand and receipts from all other sources $3,069.16, making a total of $13,615.11. The expenditure, including over-draft at bank of $1,731.21, was $18,961.15, which leaves an increased debit balance of $5,346.04.

The quantity of coal received by vessel is 166,316 tons, 159,845 tons of hard coal and 6,471 tons of soft coal; this is 11,113 tons less than the amount received last year. This I think is owing in great measure to the very mild winter of 1888-89, and the large imports of last year, which left the dealers with pretty heavy stocks on hand at the opening of navigation.

The amount of coal brought by rail, as per information received from the Custom House, was: bituminous, 146,922½ tons; anthracite, 143,075 tons; the total amount of coal received by rail and vessel is 456,313½ tons, or 58,550½ tons less than last year.

The amount of dredging done this year has been very heavy, owing to the low state of the water and to the impossibility of preventing the sandbar encroaching on the channel without some protecting wall. Twice, after dredging the north-western end of the bar, the sand was found to have made out in long tongues into the channel. This effect is produced, I have no doubt, in calm weather by the waves from incoming steamers as much as by a south-west blow, and the only way to prevent this would be a protecting crib work around the end of the bar, the cost of which would be expensive, but whether it would not be cheaper in the end to incur that expense, will be for the Commissioners to determine. The amount expended in dredging this year was $12,740.17. All this, with the exception of $50 for dredging at Keith's slip, was expended on the western channel.

The water was low again this year, the average being + 10½ inches—one and a-quarter inches higher than the average of last year, which was the lowest for the previous seven years. The water reached its highest point, + 22 inches, on the 3rd July, kept pretty steady during that month, then commenced to fall, and continued falling till it reached its lowest point, — 1 inch, on the 4th November, after which it began to rise, and on the 31st December was + 11 inches.

The range lights and Island Lighthouse were lighted on the 25th March, and discontinued on the 13th December.

The buoys were placed in the western channel on the 2nd April, those in the Eastern Gap on the 5th April, and those in Don channel and around the point of the Island on the 8th April.

Complaints were made again of the fog-horn service at the Island not being satisfactory, and one specific charge, "that the fog-horn was not blown as it should have been blown during the storm of the 26th November, thereby causing the wrecking of the vessels "Annandale" and "Gleneffer," was made by Captain Shaw, of the "E. H. Rutherford." This I forwarded to the Department of Marine, at Ottawa. An investigation was held here by Lieut. Gordon, R.N., on behalf of the Government, but the result of such investigation has not yet transpired.

The following Government work at the Island has been done, under the supervision of E. B. Temple, Esq., the engineer in charge:

The breastwork has been further protected by 3,496 cubic yards of stone, making, up to the present time, 2,920 lineal feet completed, and 670 feet partially completed.

In regard to the proposed improvements at the Eastern Gap, nothing further was done than the dredging of a navigable channel, averaging 250 feet in width. This channel was buoyed and opened to vessels on the 23rd of August.

Arrangements have been made with the Board of Trade for the lease of a couple of rooms in their new building on the corner of Yonge and Front streets, as offices for the Trust. These offices will probably be ready for occupation about October. The lease of our present offices will expire on the 1st day of February, 1891.

I regret to say that, although an Order in Council passed, in 1888, in favour of the Trust for the patent of the lot filled in by the Commissioners, at the Queen's Wharf, the Commissioners, up to the present time, have been unable to obtain the patent, owing to the persistent opposition of the Canadian Pacific Railway Company.

I had to lay an information in the Police Court against Mr. F. B. McNamee, the contractor for laying the pipe for the city water works, for breach of harbour by-law, in dumping sand, &c., into the harbour. Mr. McNamee disputed the case, but after a number of postponements extending over a period of two months, Mr. McNamee was finally fined $20 and costs.

I have much pleasure in testifying to the zeal and ability with which my deputies, Mr. C. W. Postlethwaite and Captain Taylor, have discharged their duties.

All which is respectfully submitted,

MORGAN BALDWIN,
Harbour Master.

8th January, 1890.

TORONTO HARBOUR WORKS.

TORONTO, 6th January, 1890.

SIR,—I have the honour to report that, owing to the encroachment of the sand-bar on the south side of the western channel, it was recommended, on the 8th of April last, that dredging would be required on the northern edge of the bar, and to remove obstructions in the channel. The recommendation was approved by the Trust, and the tender of John Conlon was accepted at the same rate as last year, viz., 15 cents per cubic yard and $100 per day for removing obstructions.

The dredge commenced work on the 27th of April, and the dredging on the bar was completed on the 30th of June, according to agreement.

The removal of obstructions in the channel was continued to the 30th of September last. On the 1st of October I reported, "by reference to the map it will be seen that the least width of the channel was 264 feet, and the greatest 390 feet, 39

feet of the bar having been dredged at the former point, south of the elevator, and 150 feet at the latter point, south of the light-keeper's house. The distance to the red buoy, at the western entrance, has been increased from 345 feet to 622 feet, a difference of 277 feet, which affords a convenient entrance from the west."

The total quantities dredged were as follows: 30,400 cubis yards on the bar, according to agreement, 25,425 cubic yards of sand, loose rock and boulders in the channel, the latter being by day's work—in all, 73¾ days.

Some dredging was done at Keith's, formerly Taylor's wharf, the quantity being 300 cubic yards.

In my report of the 1st of October, it was also stated, "further dredging will in all probability be required next year, if the water in the lake continues to fall, and it will be advisable to continue the dredging of the shoal in front of the Northern and North-Western Company's wharf No. 5, on which there are now only 11 feet of water."

In order to prevent what will soon be annual dredging on the bar south of the Queen's Wharf, it may be advisable to consider the propriety of constructing crib work south of the channel. This method of preventing further encroachment has often been suggested, and the expense would be considerable, but might probably be justified by the annual saving of the cost of dredging. Some calculations have already been made, but I am not prepared to report at present as to the details of cost, &c., but expect to do so in a short time.

As the Dominion Government are now constructing a larger channel at the south-eastern portion of the Bay, for deep draught vessels, it is probable that any expenditure that may be required at the western channel may have to be provided for by the Commissioners. Any permanent improvement, therefore, that will effect a saving in the annual dredging, would be a matter for the serious consideration of the Trust.

I remain, your obedient servant,

KIVAS TULLY,
Engineer.

A. B. Lee, Esq.,
Chairman Toronto Harbour Commissioners.

APPENDIX No. 7.

REPORT OF THE HARBOUR COMMISSIONERS OF PICTOU, N.S., FOR THE CALENDAR YEAR ENDED 31st DECEMBER, 1889.

Pictou, N.S., 22nd February, 1890.

Sir,—I have the honour to enclose herewith statement of receipts and expenditure of the Harbour Commissioners for the year ending 31st December.

With reference to the South Market street wharf, the only one on the Pictou side now under control of the Commissioners, and the only one for a vessel of large size to come to, I regret to state that much as it requires extension and the water deepened by dredging to admit vessels of large class approaching it, there will be no funds available, for I am instructed to inform you that the balance on hand will be spent in completing the Abercrombie Point wharf, Ferry Company's wharves, and repairs at New Glasgow and Trenton.

The Harbour Master's report for 1889 shows the total number of arrivals, sailing vessels and steamers, to be 1,525, aggregating 275,574 tons, against 1,425, aggregating 249,204 tons, during 1888.

I have the honour to be, Sir,

Your obedient servant,

J. A. GORDON,

Chairman Harbour Commissioners.

The Deputy Minister of Marine,
Ottawa.

DR. ACCOUNT of Receipts and Expenditure of Harbour Commissioners, to 31st December, 1889. CR.

1889.		$ cts.	$ cts.	1889.		$ cts.	$ cts.
Jan. 31.	To Balance on hand per statement		3,434 57	April...	By paid T. Fraser, bushing East River	12 00	
July...	Wharfage from Dredge "St. Lawrence"	50 00			" James Munro do	8 00	
	Cash from harbour dues, per Collector	677 46			" R. Dunbar, bushes for do	4 00	
	Cash from Wharfinger for wharfage	88 19			" Bushing Middle and West Rivers	16 00	
	Interest account	110 95			" John McLellan, repairing buoys	2 50	
			926 60		" Logs, &c., for Abercrombie Point wharf	616 23	
					" Labour, Abercrombie Wharf	94 49	
					" T. Fraser, bushing East River	4 00	
					" Wm. Carson, per account	5 00	
					" A. McKaracher do	8 84	
					" C. W. Ives do	13 60	
					" A. A. Garvin do	50 49	
					" D. Dawson, Gordon & Co., account	49 65	
					" Tug "Daisy," setting and lifting buoys	49 00	
					" Wharfinger's salary	200 00	
					" Harbour police (2)	200 00	
					" Secretary's salary	100 00	
					" 5 per cent. on $1,333.80	66 65	
							1,500 45
					By Balance on hand		2,860 72
			4,361 17				4,361 17

E. & O. E.

Sworn to at Pictou,
before me, this 3rd day of February, 1890.
F. WYATT FRASER, *J.P.*

J. A. GORDON,
Chairman Harbour Commissioners.
PICTOU, 31st January, 1890.

APPENDIX No. 8.

REPORT OF THE HARBOUR COMMISSIONERS OF NORTH SYDNEY, C.B., FOR THE CALENDAR YEAR ENDED 31ST DECEMBER, 1889.

To the Honourable CHARLES H. TUPPER,
Minister of Marine and Fisheries,
Ottawa.

SIR,—In compliance with the provisions of section 4 of the 42nd Victoria, chapter 30, we have the honour to submit our report for the year 1889.

The block built on the North Bar by the Harbour Commissioners, of 40 feet, also the block built by Mr. McDonald in 1881, under the inspection of Mr. Millage, the Government Engineer, of 64 feet, and the further extension of 150 feet, built in 1882, under Government supervision, had settled so much in the sand and soft bottom as to make the wharf work unsafe for vessels to lay by and discharge ballast, as stated in our report of 1887. The Commissioners, during the past season, undertook the needed repairs, and by building on them have raised them two blocks, measuring 214 feet in length, some four feet, and faced them with square timber. This improvement cost an outlay of $592.86, the accounts and vouchers for which repairs we now forward to your Department. We have the pleasure of enclosing you the Harbour Master's report, giving the usual shipping and coal statistics of the harbour since 1879. The report shows a steady increase in coal exports and the shipping tonnage of the port.

The following is a comparative statement of the Commissioners' receipts, duty paid, imports, exports, &c., for 1879 compared with 1889:—

——	1879.	1889.	Difference in 1889.	Per cent.	—
	$ cts.	$ cts.	$ cts.		
Commissioners received from tonnage dues	959 28	1,752 66	793 38	82	Increase.
Sick Mariner's Fund receipts	928 14	1,139 62	211 48	22	do
Duty collected at Customs	22,939 75	34,000 00	11,060 25	48	do
Imports, foreign	83,841 00	96,000 00	12,159 00	45	do
do domestic	447,719 00	675,000 00	227,281 00		
Exports, foreign	87,517 00	85,000 00	2,517 00	55	do
do domestic	190,000 00	340,000 00	150,000 00		
	Tons.	Tons.	Tons.		
Coals, exports	147,051	469,337	312,286	212	do
Tonnage arrivals, shipping	245,220	510,803	265,583	108	do

The imports and exports to and from Canadian ports are made upon a careful enquiry as to the trade of the port, there being no entry at the Custom House of value of trade with Canadian ports.

Since the appointment of the Harbour Commissioners to look after the harbour of North Sydney considerable work has engaged their attention.

A glance at our report to your Department for 1879, 1880 and 1881, and, for a retrospective, the report of 1885, also a glance at Mr. Perley's report and Messrs. R. H. Brown and A. R. McKenzie's report for 1879-81, indicates some of the improvements and work requiring our consideration on appointment to office.

We here enclose you a copy of Mr. Henry F. Perley's report to the Department of Public Works on 31st December, 1875, and also Mr. R. H. Brown's report of 1880.

There have been considerable improvements undertaken and made, but the work has not advanced as fast as anticipated, owing to the great lack of stone ballast.

The suggestion of Mr. Brown, in his report of 1880, to build a block on the inside of the bar, has been tried. A block was built, and, in fact, a number of blocks have been built inside the North Bar, but the lack of stone ballast has delayed us in filling up the inside of the bar, so as to prevent the sand wash from coming inside the harbour. The heavy sea surf on the top of the North Bar, with north-east winds in shoal water, makes it difficult to keep ballast in it and to keep up narrow wharf work, as proposed and undertaken in 1881.

The required repairs in the breach in this wharf work on the shoal part of the bar, between the shore and deep water blocks, has been carefully considered by us.

In our report of 1885, we remark: "The outer work (referring to the ballasting of the 1880-82 blocks) is now well secured, and it is proposed to look after the shore end. To repair the breach on the top of the bar, in shoal water, would cost considerable, as vessels cannot get near the place where ballast is most needed, and the continual handling of stone is expensive. Instead of repairing this work, it is proposed to have stone ballast dumped on the inside of the bar, which will eventually fill up from the shore, to the deep water work, and thus prevent all wash from the bar coming into the harbour, and save the expense of keeping up the wharf work on the top of the bar."

Stone ballast, as anticipated in 1885, has not been obtainable, first, on account of the large number of new wharves building, which have taken most of the available stone ballast, and second, most of the large vessels bring loam or sand ballast now, a kind of ballast that could not be dumped on the inside of the Bar, as it would wash and fill up the harbour, without close wharf work to keep the earth from washing.

On looking carefully into the matter, and after ten years of experience, the Commissioners are of the opinion that the best course to pursue, to make the work satisfactory, is to carry out Mr. Perley's and Mr. Millage's recommendation in their report, and as per their plan to the Public Works Department on 31st December, 1875.

We herewith submit a small plan which is copied from Mr. Perley's and in line with his suggestion.

In 1880 the land between the outer wharf work and the shore as indicated in the plan could not be got, which partly accounts for building back on the top of the bar, but now it is accessible. A 48-foot block will be noticed half way between the shore and the deep water work. This was built by the owner of the property in 1884 and 1885, with the expectation that there would be sufficient stone ballast to fill up the inside of the bar, as suggested by Mr. Brown, but this expectation has not been realized, owing to the want of stone ballast, as already stated; and it will appear that the best course in the interest of the harbour is to carry out Mr. Perley's and Mr. Millage's original plan.

The Commissioners would respectfully ask your favourable consideration of the required improvements, and as the amount of funds at their disposal is not sufficient to enable them to go on with the work as fast as desired, beg to ask if the Government will give a grant of two or three thousand dollars that the work may be proceeded with without delay.

It will be noticed by Mr. Perley's report that he estimates the cost of 370 feet at $10,000. The length from the shore to the wharf work, built in 1880, 1881 and 1882 on the plan shown, is 650 feet. The Commissioners estimate that they can build this required extension with the assistance of about $5,000, and when completed there will be a continuous wharf work out into the harbour, as recommended by Mr. Perley, of 904 feet, including the block built by the Commissioners in 1880 of 40 feet, and the blocks built in 1881 and 1882 of 64 and 150 feet respectively, under Mr. Millage's inspection. By Mr. Perley's estimate this length of wharf work would cost upwards of $25,000.

Now that so costly and important a public work in the interest of the port of North Sydney can be built in two or three years by such a small grant from the Government, encourages us in making this request, which we commend to your favourable consideration.

RECEIPTS FROM SHIPPING.

There was an increase in the receipts from shipping for the past year of $350.66.

Of the 510,803 tons of shipping that called, only 175,266 tons paid harbour dues.

The following is a statement of the receipts and expenditure for 1889 :—

Receipts.	$ cts.	Expenditure.	$ cts.
To Cash on hand from last year	814 28	By A. C. Bertram's act., printing	12 00
Received from Collector of Customs	1,752 66	Harbour Master's salary, G. B. Moffatt	400 00
		G. B. Moffat, for boat hire	50 00
		J. R. Lithgow, for interest	210 00
		Bank charges, remitting	0 76
		Chairman M. J. Phoran's salary	150 00
		Repairs on North Bar Block	592 86
		Telegrams	0 34
		Secretary's salary	250 00
		Treasurer, W. H. Moore, acc., 5 per cent. on $1,752.66	87 63
		Cash to Balance	813 35
	2,566 94		2,566 94
To Cash to Balance	813 35		

We have the honor to be, Sir,

Your obedient servants,

M. J. PHORAN,
GEO. H. DOBSON,
W. H. MOODY.

HARBOUR MASTER'S REPORT FOR 1889.

COMPARATIVE Statement of Arrivals and Tonnage of Vessels for Cargoes and Steamers for Bunker Coals.

Class of Vessels.	1879.		1880.		1881.		1882.		1883.		1884.		1885.		1886.		1887.		1888.		1889.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Ocean steamers	41	42,550	197	197,242	253	258,470	174	178,566	217	212,467	271	240,674	240	226,468	289	241,849	292	280,943	335	259,493	423	372,903
Coasting do	105	45,752	43	15,297	55	25,703	128	86,759	178	40,732	121	35,303	71	17,475	77	16,044	82	19,810	160	26,191	86	19,480
Ships	8	7,541	13	16,768	9	11,076	5	5,989	11	10,480	11	13,148	5	5,523	5	7,151	6	7,528	6	8,238	5	6,364
Barques	134	68,224	124	77,882	136	44,753	110	62,380	105	53,157	159	80,039	133	62,827	150	73,219	110	49,056	78	32,010	81	36,921
Brigantines	145	25,358	189	45,524	125	25,854	185	45,969	149	36,186	189	36,597	166	33,998	86	19,368	102	18,323	109	18,301	100	18,240
Schooners	717	55,775	607	45,277	439	35,226	498	75,829	826	64,878	856	63,428	702	54,266	861	62,988	672	52,868	591	51,272	749	56,895
Totals	1160	245,220	1173	297,290	1017	401,082	1100	455,492	1486	417,900	1607	469,189	1317	400,557	1468	420,619	1264	428,528	1279	395,505	1444	510,803
Number of seamen	9,892		12,385		10,147		11,927		14,279		15,730		15,014		14,803		13,316		15,776		18,846	

COAL EXPORTS.

COMPARATIVE Statement of the Coal Shipments from the Harbour of North Sydney, embracing all the Mines, since 1879.

Years.	Sydney Mines.	Victoria.	International.	Old Bridgeport.	Reserve.	Totals.
1879	108,259	.....	21,523	.....	17,269	147,061
1880	115,307	.....	58,897	.....	13,614	187,818
1881	133,135	.....	78,285	.....	68,884	280,304
1882	133,623	.....	102,927	.....	74,432	310,982
1883	131,673	154	96,997	.....	104,777	333,601
1884	131,339	10,408	80,798	3,045	86,550	312,140
1885	105,124	41,066	63,750	12,290	74,183	296,413
1886	122,000	46,745	105,590	12,500	84,500	371,335
1887	147,000	65,000	103,000	12,000	81,500	408,500
1888	130,000	78,000	102,000	25,000	105,000	440,000
1889	125,000	88,900	123,666	25,000	106,771	469,337

PORT OF NORTH SYDNEY.

COMPARATIVE Statement showing the dates of the Closing and Opening of Navigation, also the first Arrival from, and the last Departure to Sea, for the past eleven years.

Years.	Closing of Navigation.	Opening of Navigation.	Last Departure.	First Arrival.
1879	February 16....	March 2....	January 24....	March 3
1880	do 4....	April 10....	do 17....	April 13
1881	January 22....	February 25....	do 19....	do 1
1882	do 27....	May 2....	do 24....	May 2
1883	do 19....	March 28....	do 17....	April 1
1884	do 16....	April 22....	do 16....	do 27
1885	do 22....	do 24....	February 15....	do 25
1886	February 28....	do 4....	do 15....	do 15
1887	do 2....	do 4....	January 27....	do 28
1888	January 19....	March 25....	do 16....	do 7
1889	February 23....	do 6....	do 27....	March 30

The harbour buoys were put out 14th May.

Respectfully submitted,

GEO. B. MOFFAT,

Harbour Master.

APPENDIX No. 9.

REPORT OF THE HARBOUR MASTER FOR THE PORT OF HALIFAX, FOR THE CALENDAR YEAR ENDED 31st DECEMBER, 1889.

HARBOUR MASTER'S OFFICCE,
HALIFAX, N.S., 18th January, 1890.

SIR,—I have the honour to submit herewith my statement for the year ending 31st December, 1889, showing the number, rig and tonnage of vessels subject to Harbour Master's dues that entered this port during the year.

I have the honour to be, Sir,
Your most obedient servant,
E. O'BRYAN,
Harbour Master.

WM. SMITH, Esq.,
Deputy Minister of Marine, Ottawa.

RECEIPTS AND EXPENDITURE of the Harbour Master, Halifax, N.S., from the 1st January till 31st December, 1889.

DR.	No.	Rig.	Tonnage.	$ cts.	CR.	$ cts.
To fees collected from	149	Steamers	219,000	683 50	By amount reverting to Harbour Master for expenses and remuneration	1,750 50
do do	3	Ships	4,304	15 00		
do do	72	Barques	37,744	244 50		
do do	10	Barquentines	3,568	24 00		
do do	6	Brigs	1,821	14 00		
do do	91	Brigantines	16,447	152 00		
do do	571	Schooners	51,564	617 50		
Total				1,750 50	Total	1,750 50

E. O'BRYAN,
Harbour Master.

Sworn to before me at Halifax, N.S., this 18th day of January, 1890.
WM. McKERROW, *Notary Public.*

APPENDIX No. 10.

TABLE showing the names of Ports proclaimed under certain Dominion Acts, the provisions of which are found in Chapter 86, Revised Statutes of Canada, for the appointment of Harbour Masters; the dates of proclamation: the names of the Harbour Masters appointed; the dates of the appointment of Harbour Masters; the amount which each of their Salaries is not to exceed; the amount of Fees collected by each of them during the Callendar Year ended 31st December, 1889, and the overplus, if any, paid into the credit of the Receiver-General.

PROVINCE OF ONTARIO.

Name of Port.	Date of Proclamation.	Name of Harbour Master.	Date of Appointment.	Amount from the fees of office salary not to exceed.	Amount collected in 1889.	Amount paid over to Receiver-General.
				$ cts.	$ cts.	$ cts.
Collingwood	3 March,'77	Andrew Lockerbie	3 March,'77	200 00	205 50	5 50
Goderich	28 April, '76	Thomas N. Dancy	22 April, '76	300 00	66 00	....
Midland	22 July, '82	E. Polkinghorn	22 July, '82	200 00	199 50	.....
Parry Sound	24 March,'83	John Galna	19 March,'83	200 00	82 50	.....
Panetanguishene	2 Feb., '77	Francis Densome	3 June, '81	200 00	13 50	.....
Port Arthur	12 May, '84	Wm. F. Davidson	12 May, '84	400 00	.....	.....
Rondeau	4 May, '78	W. R. Fellowes	17 Dec. '88	100 00	2 50	.....
Southampton	23 Sept.,' 75	.....	.....	100 00	70 50	.....
Sarnia	25 July, '85	Robt. McAdam	3 May, '86	300 00	.....	.....

PROVINCE OF QUEBEC.

Amherst	14 Sept., '78	John Cassidy	2 Sept., '78	200 00	19 00	.....
Carleton	8 Dec., '81	Joseph H. Landry	8 Dec., '81	200 00	.....	.....
Chicoutimi	17 June, '85	Ainsworth Sturton	8 June, '86	200 00	.....	.....
Gaspé	25 Sept., '74	Francis J. Eden	3 April, '89	500 00	77 50	.....
House Harbour	9 Aug., '87	Peter Bourque	9 Aug., '87	200 00	.....	.....
Matane	19 Oct., '77	G. C. Pelletier	11 Aug., '88	200 00	42 50	.....
Métis	7 Feb., '78	P. F. Leggatt	7 Feb., '78	200 00	16 00	.....
New Carlisle	25 Feb., '89	Digby Smollett	25 Feb., '89	200 00	7 00	.....
New Richmond	15 April, '82	Henry Leblanc	3 April, '82	200 00	31 00	.....
Oak Bay	27 March,'80	Jas. D. Sowerby	22 March,'80	200 00	.....	.....
Paspebiac	12 May, '77	Hugh Christie	22 May, '77	150 00	26 50	.....
Port Daniel	25 March,'89	J. Lawrence	25 March,'89	200 00	5 50	.....
Rimouski	5 March,'77	Jos. St. Laurent	30 May, '78	200 00	.....	.....
Rivière Ouelle	22 July, '82	Achilles Fraser	22 July, '82	100 00	.....	.....
St. Thomas	2 Jan., '86	Eug. Hammond	21 Dec., '85	200 00	96 00	.....
St. John's	Within the Harbour of Montreal.	Alfred Pinsonneault	8 March,'88	500 00	777 50	277 50
Sorel		Pierre Bellefeuille	20 April, 75	300 00	.....	....

TABLE showing the names of Ports proclaimed under the Dominion Acts, &c.—*Continued.*

PROVINCE OF NEW BRUNSWICK.

Name of Ports.	Date of Proclamation.	Name of Harbour Master.	Date of Appointment.	Amount from the fees of office salary not to exceed.	Amount collected in 1889.	Amount paid over to Receiver-General.
				$ cts.	$ cts.	$ cts.
Bathurst	30 May, '73	James Andrew	23 March,'81	200 00	113 50	
Black's Harbour and Beaver Harbour	22 Sept., '83	E. W. Cross	17 Sept., '83	100 00	16 50	
Buctouche	30 May, '73	Daniel Landry		100 00	38 50	
Campbelltown	30 May, '73	William Mott	9 July, '73	200 00	56 50	
Campobello	30 May, '73	John Benjamin Beatty	7 July, '73	100 00	37 50	
Caraquet	30 May, '73	Louis Poirier	17 April, '83	150 00	19 50	
Chatham	30 May, '73	Wm. Johnston	25 June, '79	300 00	412 50	112 50
Cocagne	30 May, '73	John Brooks	7 July, '73	100 00		
Dalhousie	30 May, '73	Wm. Smith	19 March,'88	200 00	158 50	
Dorchester	30 May, '73	E. Palmer	11 April, '87	200 00	25 00	
Fredericton	30 May, '73	Vacant				
Grand Manan, North	18 Sept., '76	James A. Pettis	21 May, '88	100 00		
Grand Manan, South	22 Aug., '89	Vacant	22 Aug., '89	100 00		
Great Shemogue	17 May, '75	Fred. Chapman	21 May, '88	100 00		
Harvey	30 May, '73	H. E. Graves	8 July, '84	100 00	7 00	
Hillsborough	30 May, '73	Nehemiah Bennett	21 Jan., '87	100 00	91 00	
Ledge of St. Stephens	30 May, '73	Charles Young	22 April, '76	100 00		
Letete, &c.	22 Sept., '83	Jos. Chambers	17 Sept., '83	100 00	16 50	
Little Shippegan and Miscou Gully	1 May, '86	Donald Harper	19 April, '86	100 00		
Little Shemogue	5 Sept., '88	Fred. Chapman	5 Sept., '88	100 00		
Moncton	30 May, '73	Vacant				
Musquash	26 March,'74	George Rose	16 May, '87	100 00	35 00	
Newcastle	30 May, '73	John Niven	7 July, '73	300 00	196 00	
North Joggins	30 May, '73	Vacant				
Port Elgin & Baie Verte	6 Feb., '73	Jacob Silliker	6 Feb., '78	200 00		
Pokemouche	7 July, '83	Vital Lousier	23 June, '83	100 00		
Richibucto	30 May, '73	James Alexander Jardine	11 May, '74	200 00	77 00	
Rockland	30 May, '73	Vacant				
Sackville	30 May, '73	Alexander Ford	28 June, '88	200 00	42 00	
St. Andrews	30 May, '73	John Wren	6 May, '84	100 00	74 50	
St. George	30 May, '73	Alexander Dick	29 Aug., '84	100 00	11 50	
St. Martin's and Quaco	14 May, '74	Joseph Carson	14 May, '74	100 00	10 00	
Shediac	30 May, '73	Alexander McQueen	19 May, '76	300 00	107 50	
Shippegan	30 May, '73	John DeGrace	10 Aug., '80	100 00	8 50	
Tracadie	7 May, '74	Vital Arceno	9 July, '75	100 00	5 00	
Waterside		Wm. Riley Copp	3 Sept., '89	100 00	3 50	
West Isles	4 Feb., '79	Thos. K. Parker	4 Feb., '79	200 00	Nil.	

PROVINCE OF NOVA SCOTIA.

Advocate	15 May, '80	Samuel Morris	10 May, '80	100 00		
Annapolis	12 March,'75	William Cummings	16 May, '79	200 00	75 50	
Apple River	14 Aug., '86	Wm. S. Tait	5 Aug., '86	200 00	22 00	
Arichat	22 April, '79	Francis Marmeau	6 May, '84	200 00	62 50	
Baddeck	23 Sept., '75	Stephen Atwater	15 Sept., '75	100 00	2 50	
Barrington	10 July, '82	Thos. L. Banks	23 Nov., '85	200 00	24 50	
Bayfield	11 July, '79	John McDonald	11 July, '79	200 00	1 30	
Bay St. Lawrence	21 April, '87	G. Zwicker	21 April, '87	200 00	Nil.	
Bear River	25 Sept., '74	Robert Austin	4 April, '87	100 00	31 50	
Beaver Harbour	24 July, '80	Henry Hawboldt	22 Sept., '88	100 00	8 00	
Big Harbour	9 June, '83	Donald McKenzie	28 May, '83	100 00		
Bourgeoise	1 May, '86	E. C. Bouchie	19 April, '86	100 00	13 50	

TABLE showing the names of Ports proclaimed under the Dominion Acts, &c.—*Continued.*

PROVINCE OF NOVA SCOTIA—*Continued.*

Name of Port.	Date of Proclamation.	Name of Harbour Master.	Date of Appointment.	Amount from the fees of office salary not to exceed.	Amount collected in 1889.	Amount paid over to Receiver-General.
				$ cts.	$ cts.	$ cts.
Bridgewater	6 May, '74	Joseph Robins Wyman	6 May, '74	100 00	41 00	.....
Bras d'Or, including New Campbelltown	6 May, '74	Francis Dunlap	6 May, '74	200 00	.....	.....
Cape Canso	6 June, '76	William Walsh	6 June, '76	100 00	103 50	3 50
Cape Negro or North East Harbour	18 May, '81	A. D. Perry	18 May, '81	200 00	37 50	.....
Chester	8 Sept., '83	Arch. Evans	4 Aug., '83	100 00	24 00	.....
Cheticamp	20 April, '76	Fulgence Ancoin	15 April, '76	100 00	.....	.....
Clarke's Harbour	1 June, '81	J. B. Brennen	1 June, '81	200 00	24 00	.....
Clementsport	1 May, '77	Thomas Tracey	1 May, '77	100 00	16 00	.....
County Line to Grand Narrows	9 June, '83	Hugh Campbell	28 May, '83	100 00	.....	.....
Cow Bay	3 March, '79	Hector McDonald	3 March, '79	400 00	144 50	.....
Crow Harbour	30 Sept., '88	James Digdon	30 Sept., '88	100 00	.....	.....
D'Escousse	23 Jan., '85	Philip Culliton	12 April, '86	100 00	32 50	.....
Digby	19 Feb., '78	James A. Hughes	19 Feb., '78	300 00	73 50	.....
East Bay	25 Aug., '83	Donald McInnis	5 April, '86	100 00	.....	.....
Fourchie	22 May, '89	Neill McLean	22 May, '89	100 00	.....	.....
Gaberouse	3 March, '79	John Wm. Hardy	2 Nov., '86	100 00	.....	.....
Glasgow and Cape Breton Pier	30 Oct., '89	Angus McQuarrie	30 Oct., '80	300 00	249 00	.....
Guysboro'	15 Jan., '89	Havelock Torey	15 Jan., '89	100 00	.....	.....
Halifax	No proclamation required by Act	Edward O'Bryan	18 March, '80	1,800 00	1,750 00	.....
Hantsport	27 June, '84	Edward Davison	27 June, '84	225 00	244 00	.....
House Harbour	9 Aug., '87	Peter Bourgue	9 Aug., '87	200 00	.....	.....
Ingonish, North Bay of	22 March, '81	William Thompson	24 March, '81	200 00	.....	.....
Ingonish, South Bay of	9 Oct., '84	P. C. Brewer	9 June, '86	100 00	3 00	.....
International Harbour, Sydney	30 Oct., '80	Michael Neville.	30 Oct., '80	300 00	281 50	.....
Isaac's Harbour	30 Oct., '89	Andrew J. Blakely	30 Oct., '89	100 00	.....	.....
Jordan Bay	25 Oct., '76	Matthew Drips McKenzie	25 Oct., '76	150 00	9 00	.....
LaHave or Getson's Cove	12 March, '75	George Henry Zwicker	25 Feb., '75	300 00	29 50	.....
L'Ardoise, Upper and Lower	22 Aug. '84	George Burke.	29 Aug., '84	100 00	2 00	.....
Lingan	12 July, '81	Thomas Laffin	12 July, '81	200 00	.....	.....
Liscombe	18 May, '81	David Rosenheiser	9 Aug., '88	200 00	5 50	.....
Little Bras d'Or Lake, between McKay's Point and Grand Narrows	25 April, '84	Peter McLean	25 April, '84	100 00	.....	.....
Little Bras d'Or Lake, from McKay's Point to Washadebuck Rivers	25 April, '84	Alex. J. McNeill	25 April, '84	100 00	.....	.....
Little Glacé Bay	3 Aug., '74	E. Douglas Rigby	8 May, '84	200 00	192 50	.....
Little Narrows and Cranberry Pt	9 June, '83	Norman Matheson	23 May, '83	100 00	200 00	.....
Liverpool	19 Jan., '77	Wm. A. Kenny	19 Jan., '77	200 00	121 50	.....
Lockeport	18 May, '81	E. A. Capstick	18 May, '81	200 00	80 50	.....
Louisburg	17 March, '79	Louis Dickson	5 Oct., '87	200 00	38 50	.....
Lunenburg	3 Dec., '75	William Henry Begg	3 Dec., '75	150 00	98 00	.....
Mahon	17 July, '80	Finlay Rankin	23 June, '80	100 00	1 50	.....
Mahone Bay	16 May, '87	W. A. Pickles	16 May, '87	200 00	27 50	.....
McNair's Cove	12 March, '75	Ronald McEachen	8 March, '75	150 00	.....	.....
Main à Dieu	31 July, '86	John Farrell	21 July, '86	100 00	5 50	.....

TABLE showing the names of Ports proclaimed under the Dominion Acts, &c.—*Continued.*

PROVINCE OF NOVA SCOTIA—*Continued.*

Name of Port.	Date of Proclamation.	Name of Harbour Master.	Date of Appointment.	Amount from the fees of office salary not to exceed.	Amount collected in 1889.	Amount paid over to Receiver-General.
				$ cts.	$ cts.	$ cts.
Maitland	26 May, '85	Jacob E. Cann	26 May, '85	100 00		
Margaretsville	26 March, '78	Robert Earley	26 March, '78	100 00		
Margaret's Bay	16 July, '75	Francis Peter Boutillier	9 July, '75	100 00	31 50	
Margaree	12 June, '86	Julian White	2 Aug., '89	100 00	3 00	
Merigomish	26 March, '78	W. C. Olding	26 March, '78	100 00		
Meteghan River	10 Feb., '83	Urbain Doucette	31 Jan., '83	100 00	21 50	
Mill's Harbour	9 June, '83	A. Hayman	28 May, '83	100 00		
Musquodoboit	19 May, '82	David Williams	19 May, '82	100 00		
Neil's Harbour	28 April, '76	Angus Buchanan	11 April, '76	100 00		
New Haven	9 June, '83	Francis Payne	28 May, '83	100 00		
Northport	27 June, '82	John Burns	27 June, '82	100 00	49 50	
Northwest Cove, Coleman's Cove and Aspotogan Harbour	22 Dec., '76	William Murphy	20 Dec., '76	200 00		
Parrsboro'	22 Oct., '73	Edward Walter Beaty	22 Oct., '73	200 00	193 00	
Petite Rivière Bridge	7 July, '83	Joseph Nelson Parks	27 April, '88	100 00	2 00	
Plaster Harbour	6 May, '74	Donald Fraser	6 May, '74	200 00		
Port George	1 May, '77	Charles B. Weaver	1 May, '77	150 00		
Port Greville	13 March, '80	James E. Hatfield	26 March, '87	200 00	15 50	
Port Hawkesbury	16 July, '75	Daniel Henesey	9 July, '75	200 00	87 50	
Port Hood	16 July, '75	John Murphy, jun	9 July, '75	200 00	7 00	
Port la Tour	14 April, '81	William Nickerson	14 April, '81	200 00	5 00	
Port Lorne	27 March, '86	Samuel Beardsley	13 March, '86	200 00	2 00	
Port Mulgrave	8 March, '76	Duncan Gillis	23 March, '83	200 00	44 00	
Port Medway	25 June, '79	John W. Hutt	19 April, '84	200 00	42 50	
Pubnico	27 Sept., '82	D. Q. Amireau	27 Sept., '82	100 00	46 50	
Pugwash	22 Oct., '73	A. A. Stevens	22 Oct., '73	100 00	43 50	
Ritcey's Cove	26 Sept., '84	Joseph Ritcey	29 Sept., '84	100 00	57 50	
River John	26 March, '78	Henry Heighton	29 Oct., '79	100 00		
St. Ann's, including Fucher Cove	20 April, '81	James McKillop	28 May, '83	200 00	23 00	
St. Mary's River	18 May, '81	James G. Pride	18 May, '81	200 00	10 00	
St. Peter's	24 Jan., '81	Peter McNeill	17 Sept., '83	200 00	84 50	
Sambro	27 Dec., '79	Vacant	23 Dec., '79	200 00		
Sheet Harbour	14 May, '74	Malcolm McFarlane	6 Dec., '83	150 00		
Shelburne	27 Aug., '77	John A. McGowan, jun	22 Jan., '80	200 00	141 50	
Ship Harbour	2 June, '84	Conrad Marks	2 June, '84	100 00	20 00	
Smith's Mountain	9 June, '83	James McGillot	28 May, '73	100 00		
Tatamagouche	27 Feb., '78	Samuel Hingley	18 March, '87	200 00	11 06	
Tidnish	5 July, '82	Charles Fields	30 June, '84	100 00	22 00	
Torbay and Whitehaven	18 May, '81	O. N. Feltmate	18 May, '81	200 00	32 00	
Tusket	18 March, '75	Charles W. Hatfield	7 March, '87	100 00		
Victoria Pier, Sydney	25 July, '84	York H. Barrington	25 July, '84	200 00	234 50	34 50
Wallace	22 Oct., '73	Charles E. Kerr	28 July, '85	100 00	15 00	
West Bay	8 May, '84	John McInnes	8 May, '84	100 00	2 00	
West Port	8 March, '87	Joseph D. Payson	8 March, '87	200 00	32 00	
Whycocomagh	29 Oct., '75	Neil McKinnon	8 Oct., '75	100 00	6 50	
Yarmouth	18 March, '75	Ebenezer Scott	19 Oct., '77	250 00	245 00	

PROVINCE OF PRINCE EDWARD ISLAND.

Alberton	15 July, '74	George Wells	17 June, '74	200 00	14 00	
Bay Fortune	10 April, '75	John R. Coffin	29 April, '78	200 00		
Brudenell	25 July, '85	John A. Gordon, jun	25 July, '85	200 00		
Cape Traverse	23 May, '84	Philip Irving	23 May, '84	100 00		

TABLE showing the names of Ports proclaimed under the Dominion Acts, &c.—*Concluded.*

PROVINCE OF PRINCE EDWARD ISLAND—*Concluded.*

Name of Port.	Date of Proclamation.	Name of Harbour Master.	Date of Appointment.	Amount from the fees of office salary not to exceed.	Amount collected in 1889.	Amount paid over to Receiver-General.
				$ cts.	$ cts.	$ cts.
Cardigan River, including Cardigan Bridge...	2 July, '78	Hercules McDonald.....	2 July, '78	200 00	.....	.....
Cardigan River, from head of river to north bank Mitchell River...	2 July, '78	Allan Campbell.....	14 June, '83	100 00	.....	.....
Casumpec.....	17 June, '74	George Wells.....	17 June, '74	200 00	.....	.....
Cove Head.....	15 May, '80	James D. McMillan.....	15 May, '80	100 00	.....	.....
Charlottetown.....	15 July, '74	David Small.....	17 June, '74	400 00	175 50	.....
Crapaud.....	15 July, '74	Wesley Myers	17 June, '74	200 00	4 00	.....
Egmont.....	15 July, '74	George Bollum.....	3 Nov., '85	200 00	.....	.....
Georgetown.....	15 July, '74	Samuel Hemphill.....	1 Dec., '37	200 00	48 00	.....
Grand River.....	10 April, '75	Ronald S. McDonald...	10 April, '75	200 00	.....	.....
Grand River, down to and including Poplar Point and Chapel Wharf.....	10 April, '75	Vacant.....	.....	200 00	.....	.....
Hillsborough River.....	24 March, '81	John Kelly.....	24 March, '81	200 00	.....	.....
Malpeque.....	10 July, '74	Alex. Thomson.....	5 April, '87	200 00	1 50	.....
Miminegash	17 April, '80	Richard McElroy.....	12 April, '80	100 00	.....	.....
Montague Bridge.....	15 July, '74	Daniel C. Campbell.....	17 June, '84	200 00	.....	.....
Murray Harbour.....	15 July, '74	Hugh McKay.....	8 May, '84	200 00	10 00	.....
New London.....	15 July, '74	George Mackenzie.	17 June, '74	200 00	4 50	.....
Pinette.....	15 July, '74	Vacant.....	.....	200 00	.....	.....
Port Hill.....	15 July, '74	James Ellis.....	17 June, '74	200 00	1 50	.....
Pownal.....	10 July, '79	A. A. Moore.....	10 July, '79	100 00	5 00	.....
Rollo Bay	10 April, '75	Vacant.....	.....	200 00	.....	.....
Rustico.....	17 May, '75	Geo. W. McKay.....	12 April, '81	200 00	.....	.....
St. Peter's Bay.....	10 April, '75	John McGrath.....	28 June, '87	.....	.....	.....
Souris, East and West...	10 April, '75	John McCormick	25 April, '79	200 00	49 50	.....
Summerside	15 July, '74	James Grady.....	7 Nov., '87	200 00	33 50	.....
Tracadie.....	17 May, '75	Donald Campbell..	31 Jan., '81	200 00	.....	.....
Tryon	12 April, '77	Alexander Howatt	12 April, '77	200 00	.....	.....
Vernon River Bridge....	19 May, '74	John Finlay.....	9 Oct., '84	200 00	.....	.....
West River.....	17 May, '75	Vacant.....	.....	.....	.....	.....

PROVINCE OF BRITISH COLUMBIA.

Nanaimo.....	10 April, '75	E. Quennell.....	24 Oct., '84	500 00	393 50	.....
New Westminster.....	23 Jan., '80	Jas. N. Draper.....	18 Aug., '86	400 00	46 00	.....
Quadra.....	17 April, '77	Vacant.....	17 April, '77	300 00	.....	.....
Vancouver, including Burrard Inlet.....	22 Feb., '88	M. W. Thane.	22 Feb., '81	400 00	429 00	29 00
Victoria and Esquimalt..	20 March, '75	W. R. Clarke.	23 March, '81	600 00	297 50	....

WM. SMITH,
Deputy Minister of Marine.

OTTAWA, 1st January, 1890.

APPENDIX No. 11.

SECRETARY'S REPORT.

HARBOUR COMMISSIONERS OF MONTREAL,
SECRETARY'S OFFICE,
MONTREAL, 17th March, 1890.

WILLIAM SMITH, Esq.,
Deputy Minister of Marine,
Ottawa.

SIR,—I have the honour, by direction of the Harbour Commissioners of Montreal, as the Pilotage Authority, to transmit, for the information of the Honourable the Minister of Marine and Fisheries, the following report of the pilotage district of Montreal for the year ended 31st December, 1889.

On the 20th March the number of branch pilots was increased to fifty, by resolution of the Commissioners, in accordance with article 141 of their by-laws, whereupon apprentices Joseph Hurteau, of Contrecœur, Edouard Perreault and Lydoric Bouillé, both of Deschambault, were granted their branches as pilots.

On the superannuation of Pilot George Raymond, of Deschambault, on account of failing health, on the 16th July, apprentice Honoré Dussault, of Ste. Petronille, was given his license.

The accompanying statement gives the names, earnings, &c., of all the pilots, for the past season.

The total amount of pilotage dues therein shown was received from the following services, viz.:—

British.

Steamers	$ 43,228 00	
Sailing vessels	4,268 33	
		$ 47,496 33

Foreign.

Steamers	$ 2,244 75	
Sailing vessels	942 17	
		3,186 92
Total		$ 50,683 25

During March an examination was held for those apprentice pilots who had been licensed five years and had fulfilled all the preliminary requirements of the by-laws, at which four presented themselves.

Mr. N. Comé Dufresne passed creditably, and having served during the past season under different pilots, as required by by-law 138, has been placed fourth in order for his branch.

Two apprentices, who have been on the list for many years, have been struck off, under Article 139 of the by-laws, having reached the age of forty years without having passed their examination.

The following list shows the name, age and residence of each apprentice pilot now serving his time under this Authority:—

No.	Name.	Age.	Residence.
1	Brière, Arthur	32	Portneuf.
2	Labranche, J. S.	33	do
3	Perrault, Alexis	27	Deschambault.
4	Dufresne, N. C.	29	do
5	Angers, N. E.	39	Ste. Anne de la Pérade.
6	Nadeau, J. B.	31	Lévis.
7	Naud, Aubert	35	Deschambault.
8	Bouille, Narcisse.	29	do
9	Leveille, Joseph	26	Batiscan.
10	Sauvageau, Josephat	27	Deschambault.
11	Dussault, Napoléon.	27	do
12	Perron, Sévère	31	do
13	Arcand, Barthélemi	27	Lachevrotière.
14	Bellisle, Prudent	26	Deschambault.
15	Arcand, George	25	Lachevrotière.
16	Toupin, Constant	23	Three Rivers.
17	Perrault, George	23	Deschambault.
18	Belisle, Arthur	28	do
19	Belanger, Charles	19	Lotbinière.

There were, unfortunately, two serious casualties to steamships, which were fully investigated.

In the early morning of the 22nd May a most disastrous collision took place off Longue Point, six miles below Montreal, between the SS. "Polynesian," while on her way outward, and the SS. "Cynthia," coming inward, by which seven lives were lost, the "Cynthia" sunk and the "Polynesian" greatly damaged.

The two pilots, L. Z. Bouillé and C. Brunet, were *ipso facto* suspended—the former from the time of arriving at Quebec with his damaged vessel.

Five of the Commissioners heard the whole of the evidence adduced, at many sittings, and the pilots were represented by counsel.

On the 5th July it was adjudged that both pilots be reinstated, the Commissioners finding it impossible to say that either pilot was guilty of any dereliction of duty.

On the night of 20th May the SS. "Escalona," while ascending the river, struck the ground near St. Croix light so hard that she had to be beached, and eventually docked at Quebec for repairs.

Pilot George Raymond was summoned before the Commissioners, and after a careful enquiry into all the circumstances was found to blame for the disaster.

While the case was still under consideration as to the punishment due the pilot, he made application to be placed on the retired list, which was granted, in view of the fact that his health was evidently failing, which was established by a doctor's certificate.

A new by-law, No. 97*a*, to ensure the safer navigation of the dredged channel, was put in force early in the summer.

At the 1889 Session of Parliament an Act, 52 Vic., chap. 34, was passed, repealing section 19 of 36 Vic., chap. 61, which provided that "The buoys and beacons within the Port of Montreal shall be placed and maintained by the Harbour Commissioners of Montreal, and the expenses of so doing shall be paid out of the funds of the Corporation."

The new Act made this service a Government one, and vested the buoy property in the Crown.

Under it the Commissioners, while asking $15,000, agreed with the Marine Department to perform the service during 1889 for $12,000 (or whatever smaller sum it should cost), believing it in the public interest that they, as the Pilotage Authority, should continue to have charge of the service, rather than that it should be let by contract.

The expenditure for the year was $2,861 more than the $12,000 agreed upon, showing that the estimate of $15,000 was well based.

The tariff of pilotage at present in force is the same as was transmitted in the report for 1888, and has been in force since 5th March, 1877.

The following is an extract from it:—

Quebec to Montreal, and *vice versa*.	Downwards.	Upwards.
	$ cts.	$ cts.
Pilotage of vessels in tow of steamers, for each foot of draft of water	2 00	2 00
do propelled by steam do do	2 50	2 50
do under sail do do	2 80	4 20
Moving a vessel from one wharf to another in the Harbour of Montreal, or from foot of Current of St. Mary into the harbour	5 00	5 00

The amount received by the Harbour Commissioners, as the Pilotage Authority of the district, was as follows:—

From poundage, 5 per cent. on the earnings of pilots...	$2,407 28
do do collected at Three Rivers..	46 14
do do do Sorel	62 82
From sundry poundage	33 13
From interest on investments and on cash in bank	2,533 86
Total	$5,083 23

The disbursements for pensions to old and infirm pilots and widows were	$4,172 49
Messrs. Riddell & Common, for audit of fund	25 00
Printing, postage and stationery	11 16
Total	$4,208 68

The above receipts and disbursements were in trust for the Montreal Decayed Pilot Fund, of which the annual report and statements were sent you on 31st December, certified by Messrs. Riddell & Common, chartered accountants.

In addition, the Commissioners received in respect of pilots and pilotage, as follows:—

License fees, under By-law No. 71, from four pilots ($10 each)	$40 00

And they disbursed the following:—

Messrs. Abbotts, Campbell & Meredith, account for attendance at investigation in June	$ 25 80
On examination of apprentices	138 75
Stenographer at examination	10 00
Postage on letters to pilots	8 00
12 copies of Pilotage Act	2 22
Stationery	8 30
Stenographer at "Cynthia-Polynesian" investigation	47 50
Abbotts, Campbell & Meredith, legal advice and attendance *in re* pilotage matters	90 00
Gazette Printing Co., by-laws and circulars to pilots	20 00
Expenses of Quebec agent and office	605 00
Total	$955 57

The deficiency of $915.57 was made up out of the harbour revenues.

I have the honour to be, Sir, your obedient servant,

ALEXANDER ROBERTSON, *Secretary.*

STATEMENT showing the Number of Branch Pilots for and above the Harbour of Quebec on the Active List on the 31st December, 1889; their Age, Residence, Number of Pilotages, Earnings, and whether employed on Special Service or on Tour-de-Role.

No.	Name.	Age.	Residence.	Date of Branch.	No. of trips to Montreal.		No. of trips to Intermediate Places.		Total No. of Trips.	Earnings to Montreal.	Earnings to Intermediate Ports.	Total Earnings.	Remarks.
					In.	Out	In.	Out		$ cts.	$ cts.	$ cts.	
1	Bouillé, Zéphirin	61	Deschambault	Mar. 1, '55	11	11	....	....	22	1,250 18	.....	1,250 18	Employed by Allan Line.
2	Bélisle, Cyrille	62	do	Nov. 15, '60	10	8	....	....	18	722 11	.....	722 11	do on Tour-de-Role.
3	Naud, Augustin	63	Montreal	Dec. 4, '61	11	9	9	....	29	754 56	249 21	1,003 77	do by Henry Dobell and Co.
4	Bélisle, Hubert A	59	Deschambault	May 23, '62	10	7	....	....	17	670 24	.....	670 24	do on Tour-de-Role.
5	Dufresne, Athanase	54	do	Mar. 2, '62	10	13	2	....	25	841 19	63 27	904 46	do by Ross Line.
6	Gagnon, Pierre	62	Three Rivers	Nov. 27, '66	10	11	1	....	22	1,164 01	26 96	1,190 97	do by Allan Line.
7	Naud, Onésime	49	Deschambault	Mar. 16, '70	10	11	....	....	21	1,226 63	.....	1,226 63	do do
8	Hamelin, J. Octave	56	do	do 17, '70	15	16	9	....	40	1,086 83	235 08	1,321 93	do by Intercolonial Coal Co.
9	Chandonnet, Jos	49	St. Henri de Lauzon, Lévis	Aug. 2, '70	15	15	....	....	30	1,699 80	.....	1,699 80	do by Beaver Line.
10	Bouillé, Louis A	50	Deschambault	Sept. 1, '70	11	10	....	....	21	1,162 68	.....	1,162 68	do by Allan Line.
11	Boudet, Prudent	48	St. Anselme, Dorchester County	Oct. 10, '70	10	12	....	....	22	1,288 32	.....	1,288 32	do by Dominion Line—Member of Pilots Committee 1889; re-elected for 1890.
12	Bélisle, Elzéar	55	Deschambault	do 10, '70	15	15	....	....	30	658 10	.....	658 10	Employed by Quebec Steamship Co.
13	Pleau, Joseph	52	St. Anne de la Pérade	do 10, '70	12	15	4	....	31	941 28	117 91	1,059 19	do by Wm. Muir & Son.
14	Brunet, Célestin	47	Montreal	Feb. 28, '72	11	10	....	....	21	1,101 64	.....	1,101 64	do by Donaldson Line.
15	Bélisle, Louis	44	Deschambault	do 28, '72	10	14	....	....	25	1,317 71	23 44	1,341 15	do by Dominion Line—Member of Pilots Committee for 1889.
16	Caien, Damase	49	Portneuf	Oct, 1, '72	6	6	1	....	14	472 36	58 22	530 58	Employed on Tour-de-Role.
17	Groleau, Ulric	42	Grondines	do 30, '72	11	6	2	....	17	727 82	.....	727 82	do do
18	Frenette, Alfred	50	Portneuf	do 30, '72	7	10	2	....	19	713 32	43 13	756 45	do do
19	St. Amant, Alfred	46	Deschambault	do 30, '72	9	8	2	....	19	661 09	52 87	713 96	do do
20	Bélanger, Philippe	51	Lotbinière	April 8, '74	7	7	....	1	15	491 89	31 87	523 76	do do
21	Victor, Gagnon	51	Champlain	do 9, '74	8	7	....	1	16	681 90	22 50	704 40	do do
22	Perrault, Narcisse	52	Deschambault	do 10, '74	14	14	....	....	28	1,488 13	.....	1,488 13	do by Donaldson Line—Member of Pilots Committee 1889; re-elected for 1890.
23	Toupin, Trefflé	42	Lake Bouchette, Lake St. John	Sept. 22, '74	9	11	....	3	23	762 26	96 21	858 47	Employed on Tour-de-Role.
24	Auger, Cléophas	43	Point Lévis	do 22, '74	14	14	....	....	28	1,575 76	.....	1,575 76	do by Beaver Line; President of Pilots Committee 1889; re-elected for 1890.

25	Desjordy, François. ...	45	Lavaltrie.	April 8, '75	8	5	....	2	15	567 08	63 17	630 25	Employed on Tour-de-Role.
26	Labranche, Ferdinand..	44	Portneuf	do 8, '75	11	11	....	....	22	1,180 66	.....	1,180 66	do by Dominion Line.
27	Perrault, David.....	48	Deschambault ..	do 9, '75	15	16	....	....	31	1,611 01	.....	1,611 01	do by Thompson Line.
28	Gauthier, Alexis.....	43	do ..	Jan. 15, '78	10	11	....	..	21	1,115 81	.....	1,115 81	do by Allan Line.
29	Bouillé, Louis Z	41	do ..	do 16, '78	9	13	....	....	22	1,241 01	.....	1,241 01	do by Allan Line; Secretary of Pilots Committee 1889; re-elected for 1890.
30	Toupin, Joseph.....	40	Champlain.....	Nov. 15, '78	19	21	....	....	40	1,600 36	....	1,600 36	Employed by Black Diamond Line.
31	Gauthier, Laurent.....	40	Deschambault ..	Dec. 10, '79	10	10	....	....	20	1,147 32	.....	1,147 32	do by Dominion Line.
32	Arcand, Jean.....	37	do ..	do 10, '79	9	12	....	....	21	1,090 49	.....	1,090 49	do by Bossiere Line.
33	Nault, Delovoie....	38	do ..	do 10, '79	21	19	....	1	41	1,592 61	20 13	1,612 74	do by Black Diamond Line.
34	Gauthier, Wilbrod.....	38	do ..	do 10, '79	10	10	....	....	20	1,164 88	....	1,164 88	do by Allan Line—Member of Pilots Committee 1889; re-elected for 1890.
35	Mayrand, Louis.....	42	St. Anne de la Pérade.	do 9, '80	13	13	....	5	31	1,088 93	151 40	1,240 33	Employed by Henshaw Line.
36	Dufresne, George.....	41	Deschambault ..	do 10, '80	7	7	....	5	19	548 34	126 75	675 09	do on Tour-de-Role.
37	Arcand Norbert.....	37	Champlain.....	do 10, '80	14	10	....	....	24	959 57	.....	959 57	do by Ross Line.
38	Toupin, Uldoric.....	35	do	do 11, '80	7	6	....	5	18	500 37	141 81	642 18	do on Tour-de-Role.
39	Bouillé, Tancréde.....	37	Deschambault ..	do 11, '80	15	13	....	...	28	1,382 91	.....	1,382 91	do by Hansa Line.
40	Arcand, Nestor.....	34	do ..	Feb. 20, '84	13	14	...	3	30	1,091 61	93 67	1,185 28	do by Carbray, Routh & Co.
41	Nault, John....	33	do ..	do 20, '84	13	17	....	....	30	1,550 01	.....	1,550 01	do by Thompson Line.
42	Dussault, Joseph.....	34	do ..	do 20, '84	8	8	....	8	24	588 97	228 08	817 05	do by McLean Line.
43	Groleau, Gédéon..	36	Grondines.....	May 20, '87	5	5	....	6	16	471 35	162 42	633 77	do on Tour-de-Role.
44	Bellisle, Néré.....	37	Deschambault ..	do 20, '87	8	8	....	....	16	609 38	.....	609 38	do do
45	Perrault, Liboire.....	40	do ..	April 20, '88	8	6	....	3	17	580 18	90 17	670 35	do do
46	Raymond, Wilfrid.....	35	do ..	do 20, '88	11	11	....	....	22	1,102 18	.....	1,102 18	do by Thompson Line.
47	Hurteau, Joseph.....	29	Contrecœur.....	Mar. 20, '89	7	7	....	1	15	634 53	23 43	657 96	do on Tour-de-Role.
48	Perrault, Edouard.....	28	Deschambault ..	do 20, '89	7	6	....	5	18	513 73	142 02	655 75	do do
49	Bouillé, Lydorie.....	33	do ..	do 20, '89	9	6	....	....	15	607 12	.....	607 12	do do
50	Dussault, Honoré., ...	36	St. Petronille...	July 16, '89	4	4	....	2	10	360 04	59 25	419 29	do do
										48,360 28	2,322 97	50,683 25	

ALEXANDER ROBERTSON,
Secretary.

HARBOUR COMMISSIONERS' OFFICE,
MONTREAL, 17th March, 1890.

APPENDIX No. 12.

QUEBEC HARBOUR COMMISSIONERS' REPORT, AS PILOTAGE AUTHORITY, FOR THE YEAR 1889.

(Under 36 Victoria, Chapter 54.)

QUEBEC, 2nd January, 1890.

To the Honourable CHAS. H. TUPPER,
Minister of Marine and Fisheries,
&c., &c., &c.,
Ottawa.

SIR,—In compliance with the requirements of "The Pilotage Act," 36 Victoria, chapter 54, section 4, I have the honour to submit the following report from the Quebec Harbour Board, as Pilotage Authority, for the year 1889.

SERVICE OF THE PILOT STATIONS.

The operations of the year opened the 23rd April by the departure of eight pilots, through the Intercolonial Railway, for the purpose of boarding, at Bic, the Pilot Schooner No. 4. The 30th of the same month Schooner No. 5 left with sixteen pilots, and was followed, the 6th May by Schooner No. 1. The 17th May twelve Pilots were dispatched *viâ* Intercolonial Railway, and two others, six days after, by the same conveyance, for the Saguenay station. The 25th of the same month Schooner No. 2 left with sixteen pilots, and on the same day twelve were sent by the railway.

As usual, all the pilot stations have been provided with pilots during the season, through the Intercolonial Railway and the pilot schooners, and the service has been performed to the satisfaction of the Commissioners. Through the liberality of the railway authorities the expenditure connected with this portion of the branch of the service is now reduced by one-third.

OLD PILOTS.

Previous to the opening of navigation all the old pilots, twenty in number, who had attained the age of sixty-five and over, were summoned before the Commissioners, under the 30th section of "The Pilotage Act," in order to ascertain whether they could continue in the exercise of their duties for the ensuing year. After the usual examination, seventeen of them were found able to remain in the active service, and their licenses were accordingly renewed for one year. The three others, Cyprien Raymond, Pierre Lapierre and Pierre Lemieux, were declared unable to perform their duties, and consequently placed on the pension list.

PILOTS SUPERANNUATED.

In addition to the three above named pilots, only one, Gabriel Lachance, has been superannuated during the year.

On being superannuated Raymond had attained the age of seventy-one, and had been fifty-one years in the active service. Lapierre had reached his seventy-second year, and had exercised his duties during fifty years. Lemieux was in his sixty-fifth year, and had served during forty-one years, and Lachance had attained the age of seventy, and had completed his forty-eighth year of active service.

Trials.

Six pilots have been brought before the Piletage Authority during the season of navigation, four of them on complaints lodged by shipmasters and the two others on complaints lodged by the Corporation of Pilots for infringing their regulations. Three have pleaded guilty, two have been found guilty after trial, and the other has been acquitted.

A statement, annexed to this report conveys all the particulars as to the nature of the complaint and the result of the investigation in each case.

Apprentice Pilots.

No change has taken place in relation to the apprentice pilots. Although the present list contains nine names, only seven are to be counted, the two others, through their long absence, being considered as dead. As stated in last report, those seven apprentices cannot be admitted to pass their examination before the number of pilots is reduced to 125, as provided for in section 8 of 45 Victoria, chapter 32.

Complaints against the Pilotage Service.

Only one complaint has been lodged, this year, against the pilotage service. It was preferred by Captain Kiddie, of the SS. "Cape Clear." After a most careful inquiry the Commissioners have been unanimous in coming to the conclusion that no blame was to be attached to the pilotage service on that occasion.

Alterations to the Mode of Lighting the Pilotage Ground, &c.

The evidence adduced during the pilot trials held this year has satisfied the Commissioners that the mode of lighting the pilotage ground under their authority was somewhat defective, and they have therefore submitted to your Department the following recommendations, which they earnestly desire will take effect on the opening of navigation, viz.:—

A fog alarm on the Island of Bic, similar to the one off Red Island;

The two-range lights in the mouth of the Saguenay River, to be lighted *de novo;*

A red and white light on the south end of the Island of Orleans, near the ferry wharf, to mark the entrance and exit of the harbour;

The lighthouse at Bellechasse and Crane Island, instead of showing plain white light, to show one-half red, the other white, the red in each case to be next to the shore, and be danger signal;

The gas buoys marking the De Beaujeu channel at Crane Island, the Channel Patch Traverse, and the one at Pilgrim Shoal, to have pink glass globes instead of white, as at present;

One gas buoy, pink glass globe, east and middle bank Traverse, three miles below lower lightship, as sure guide to make Traverse by south channel, and as a guide to or from north channel;

Fog whistle at Brandy Pots lighthouse; automatic buoy north-west reef, Green Island;

Gun of Green Island to be fired every fifteen minutes, instead of thirty.

The Commissioners have stated that those recommendations will involve comparatively trifling expense, save the request for another gas buoy; but, to suit such an objection, they have suggested that the gas buoy now at Grosse Isle be transferred to the Middle Bank Traverse.

Deaths.

Two pilots have died during the year. The first, Eustache Dorion, was in his fifty-seventh year, and had been in active service during thirty-three years; the other, Magloire Delisle, had attained his seventy-third year, and had completed his forty-ninth year of active service.

DIRECTORS OF THE CORPORATION OF PILOTS.

At their annual meeting, held the 10th December, the pilots elected the following directors to their Corporation for the ensuing year: Messrs. Joseph Fortier, Auguste Despres, Laurent Godbout, Jean Baptiste Talbot, Adjotor Baillargeon and Joseph Eugène Lachance; and, at a meeting of the new Board, held the following day, Mr. Joseph Fortier was re-elected President.

Annexed to the present report are various statements not therein alluded to, which contain all the information yearly conveyed to your Department by the Commissioners in their capacity of Pilotage Authority.

I have the honour to be, Sir,

Your most obedient servant,

A. H. VERRET,

Secretary-Treasurer.

QUEBEC HARBOUR COMMISSION.

STATE OF THE TIDES AND WIND IN THE HARBOUR OF QUEBEC DURING YEAR 1889.

(According to the record kept by Mr. J. E. Bernier, Dock Master, Graving Dock.)

January	5.—Highest tide :	27 feet 8 inches on gauge.
do	22.—Lowest do	22 feet 8 inches on sill.
do	Wind—West during	17 days.
	East do	12 do
	North do	0 do
	Calm do	2 do
February	1.—Highest tide :	27 feet 6 inches on gauge.
do	26.—Lowest do	6 feet on sill.
do	Wind—West during	17 days.
	East do	9 do
	North do	0 do
	Calm do	2 do
March	7.—Highest tide :	26 feet 10 inches on gauge.
do	21.—Lowest do	6 feet 4 inches on sill.
do	Wind—West during	16 days.
	East do	13 do
	North do	0 do
	Calm do	2 do
April	19.—Highest tide :	27 feet 1 inch on gauge.
do	8.—Lowest do	7 feet 2 inches on sill.
do	Wind—West during	14 days.
	East do	13 do
	North do	0 do
	Calm do	3 do
May	17.—Highest tide :	27 feet 1 inch on gauge.
do	20.—Lowest do	9 feet 4 inches on sill.
do	Wind—West during	18 days.
	East do	11 do
	North do	0 do
	Calm do	2 do

June	15.—Highest tide :	27 feet 7 inches on gauge.	
do	13.—Lowest do	9 feet on sill.	
do	Wind—West	during	18 days.
	East	do	9 do
	North	do	0 do
	Calm	do	2 do
July	14.—Highest tide :	27 feet 7 inches on gauge.	
do	15.—Lowest do	9 feet on sill.	
do	Wind—West	during	15 days.
	East	do	12 do
	North	do	0 do
	Calm	do	4 do
August	12.—Highest tide :	26 feet 9 inches on gauge.	
do	13.—Lowest do	8 feet 5 inches on sill.	
do	Wind—West	during	18 days.
	East	do	9 do
	North	do	0 do
	Calm	do	2 do
September	10.—Highest tide :	26 feet on gauge.	
do	9.—Lowest do	8 feet 2 inches on sill.	
do	Wind—West	during	19 days.
	East	do	9 do
	North	do	0 do
	Calm	do	2 do
October	8.—Highest tide :	27 feet on gauge.	
do	24.—Lowest do	8 feet 6 inches on sill.	
do	Wind—West	during	15 days.
	East	do	13 do
	North	do	0 do
	Calm	do	3 do
November	28.—Highest tide :	29 feet 6 inches on gauge.	
do	17.—Lowest do	5 feet on sill.	
do	Wind—West	during	17 days.
	East	do	12 do
	North	do	0 do
	Calm	do	1 do
December	22.—Highest tide :	27 feet on gauge.	
do	1.—Lowest do	7 feet on sill.	
do	Wind—West	during	19 days.
	East	do	10 do
	North	do	1 do
	Calm	do	1 do

QUEBEC HARBOUR COMMISSION.

MEMORANDUM REGARDING THE OPENING AND CLOSING OF NAVIGATION, AND THE FORMATION OF ICE IN THE HARBOUR OF QUEBEC, FOR THE YEAR 1889.

A large open boat, belonging to Mr. Dufort, of Crane Island, arrived in port with passengers the 16th March, at 6 p.m.

Schooner "Water Fly," from Malbaie, arrived in port the 16th April at 3 p.m.

The ice bridge between Quebec and the Island of Orleans broke the 6th April, and the 13th of same month the ice was all gone.

The tidal basin was free of ice the 10th April, and the west dock the following day. The River St. Charles was free of ice the 11th April.

Steamboat "Union," of the Richelieu and Ontario Company, arrived in port from Sorel on the 22nd April, at 5 p.m.

Steamboat "Quebec," of the same company, arrived in port the 23rd April, at 7 a.m.

The first ocean steamer, "Lake Nepigon," arrived in port the 26th April, at 4 p.m.

The first sailing ship, bark "Howard," from London arrived in port the 30th April, at 6:30 a.m.

The last sailing vessel, ship "Curlew," left port the 9th November, and was followed next day by the barque "Lake Erie," from Montreal.

The last mail boat, "Vancouver," left port the 22nd November.

The steamship "Polino," from St. John, Nfld, *viâ* Cow Bay, arrived in port the 23rd November, at 7 a.m.

The steamship "Electrique" left port the 27th November.

The ice formed the 4th December in the tidal basin and the wet dock.

The ice formed the 14th December in the River St. Charles.

The ice bridge formed the 15th December between the Island of Orleans and the north shore, and on the 20th following the ice gave way, and had not reformed at the close of the year.

A. H. VERRET,
Secretary-Treasurer.

Harbour Commissioners' Office,
Quebec, 2nd January, 1890.

QUEBEC HARBOUR COMMISSION.

LIST of Apprentice Pilots acting immediately under the Quebec Harbour Commissioners' Pilotage Authority on the 31st December, 1889.

Number	Names.	When Indentured.	Remarks.
1	George Dugal	11th April, 1871.	Absent since the fall of 1877.
2	Ernest Nolet	19th March, 1874	Absent since the fall of 1878.
3	Adélard Vézina	23rd May 1883.	It is stipulated in the indentures of those apprentices that they will not be admitted to pass their examination before the number of pilots is reduced to 125, as provided for by the Act 45 Victoria, cap. 32
4	Jean-Baptiste Pouliot	23rd do 1883.	
5	Joseph Thivièrge	23rd do 1883.	
6	Léonidas Lachance	23rd do 1883.	
7	Eudore Langlois	23rd do 1883.	
8	Herménégilde Pâquet	23rd do 1883.	
9	Frs.-Xav. Eustache *alias* Wm. Dorion	12th July, 1883.	

Certified.

A. H. VERRET,
Secretary-Treasurer.

HARBOUR COMMISSIONERS' OFFICE,
QUEBEC, 2nd January, 1890.

QUEBEC HARBOUR COMMISSION.

STATEMENT of Trials held during the year 1889 before the Quebec Harbour Commissioners, under the authority of the Pilotage Act, 36 Victoria, Chapter 54.

Names of Pilots Tried.	Nature of Complaints.	Dates of Trials.	Result.
Narcisse Desprès	For having, on the 7th May, grounded the ship "Hahnemann" on Red Island Reef.	18th May	Pleads guilty.—Suspended for the remainder of the season of navigation.
Cyrille Lapointe	For having, on the 20th May, grounded the bark "Ruby" three miles below Point St. Lawrence.	4th, 7th and 12th June.	Acquitted.
Gabriel Lachance	For having, on the 5th June, grounded the schooner "Prinula" on White Island Reef.	19th June	Found guilty.—On account of his old age the defendant was placed on the pension list and condemned to pay the costs of the trial.
Louis Honoré Lapierre	For refusal to pay over to the treasurer of Corporation of pilots $25 charged by him and received from master of ship "Pisco" for services rendered at Bic.	3rd, 11th and 15th July.	Found guilty.—Fined $40 and costs.
Jacques Georges Dugas	Insult to one of the directors of the Corporation of Pilots.	29th August.	Pleads guilty.—Fined $10 and costs.
Elzéar Normand	For having, on the 1st October, grounded the SS. "Canopus" on Point St. Valier.	26th October	Pleads guilty.—Suspended for the space of eighteen calendar months and condemned to pay the costs.

Certified.

A. H. VERRET,
Secretary-Treasurer.

HARBOUR COMMISSIONERS' OFFICE, QUEBEC, 2nd January, 1890.

STATEMENT showing the Number of Pilots for and below the Harbour of Quebec on the Active List on the 31st December, 1889; the Number who Retired, struck off the Active List or Died during the Year; the Number Temporarily Suspended; the Number who were unable to Serve; the Number in charge of the Government Steamers, &c., &c.

Number.	Name.	Age.	Residence.	Number of Pilotages Effected.			Casualties and Remarks.
				Inwards.	Outwards.	Movages.	
1	Régis Ménard	74	St. Valier	5	6	5	
2	Joseph Pouliot	74	St. John, Orleans	7	4	4	
3	Jean Dugas	73	Quebec	5	5	4	
4	Edouard Genest	71	St. Pétronille, Orleans	5	5	3	
5	Magloire Delisle	73	Trois-Pistoles	5	4	5	Died the 10th November.
6	Joseph Dick	70	St. John, Orleans	5	5	4	
7	George Audet *dit* Lapointe	69	Garthby, Wolf	5	5	4	
8	Gabriel Lachance	70	St. John, Orleans	2	0	1	Tried the 19th June. Pensioned the same date.
9	François Dallaire	72	St. Laurent, Orleans	5	5	5	
10	David Bouffard	70	do	5	4	5	Sick during 24 days.
11	Antoine Lapointe	65	Quebec	5	5	5	
12	Jean Chassé	73	Cacouna	5	5	4	
13	François Dumas	71	Green Island	6	4	4	
14	Gilbert Baillargeon	67	Ste. Pétronille, Orleans	5	6	5	
15	Joseph Phil. Couillard	67	Quebec	0	0	0	One of the directors of the Corporation of Pilots. Not re-elected last election.
16	Julien Dion	71	Green Island	5	4	4	
17	Jérémie Dufresne	71	Quebec	5	5	4	
18	Antoine Gobeil	61	St. Laurent, Orleans	7	7	1	Employed, all the season, by the Allan Line of Steamers.
19	Pierre Fontaine	61	Quebec	5	6	5	
20	Victor Demers	64	Lauzon, Lévis	5	4	4	
21	Joseph Plante	59	St. Paul's Bay	14	16	3	Employed, all the season, by the Thomson Line of Steamers.
22	Louis Thivièrge	60	St. John, Orleans	5	4	4	Sick during 30 days.
23	Charles Francis Brown	61	Quebec	9	11	3	Employed, all the season, by a Collier.
24	Paul Pâquet	58	St. John, Orleans	5	9	5	
25	Joseph Pouliot	62	do	5	4	5	
26	George Normand	59	Crane Island	6	5	5	
27	David Damour	57	Trois-Pistoles	5	5	5	
28	Charles Vézina	55	St. Michel, Bellechasse	9	8	1	Employed, all the season, by the Allan Line of Steamers.
29	Numa Lachance	55	do do	8	7	3	Employed, all the season, by the Allan Line of Steamers.
30	Annibal Baquet	54	Quebec	13	13	4	Master, Steamer "Miramichi."
31	Joseph Gravel	60	do	11	9	3	Employed, all the season, by the Dominion Line of Steamers.

32	Auguste Couillard Desprès	53	Lauzon, Lévis	0	0	0	One of the directors of the Corporation of Pilots. Re-elected at last election.
33	Jean Bte. Pouliot	48	St. John, Orleans	5	4	5	
34	Jean Gobeil	48	do	4	2	3	Sick during 80 days.
35	Joseph Pâquet	52	do	4	6	4	
36	Louis Edmond Morin	51	Quebec	7	11	2	Employed, all the season, by the Hansa Line of Steamers.
37	Moïse Lachance	52	St. John, Orleans	5	6	4	
38	Joseph S. Brown	55	Quebec	12	11	3	Employed, all the season, by the Dominion Line of Steamers.
39	Hubert Raymond	50	do	6	10	5	
40	Achille Damour	50	St. Valier	5	5	5	
41	Cyrille Lapointe	50	St. Laurent, Orleans	5	5	4	Tried the 4th, 7th and 12th June. Acquitted.
42	Joseph Pouliot	46	St. John do	8	5	5	
43	Edmond Larochelle	46	St. Michel	0	0	0	Master Government Steamer "Napoleon III."
44	Ant. Thomas Chouinard	55	Pointe au Père	11	9	3	Employed, all the season, by a Collier.
45	Laurent Godbout	46	St. Laurent, Orleans	0	0	0	One of the Directors of the Corporation of Pilots. Re-elected at last election.
46	Adelme Pouliot	50	do do	11	11	3	Employed, all the season, by the Dominion Line of Steamers.
47	Bart. Pepin *dit* Lachance	44	St. John do	6	6	5	
48	Frs.-Xav. Delisle	44	St. Romuald	6	4	5	
49	Jos. Pepin, *dit* Lachance	55	Quebec	5	6	5	
50	Damien Eugène Boulanger	46	Tadoussac	0	0	0	Employed, all the season, on the Saguenay Station.
51	Cyprien Langlois	45	St. John, Orleans	5	5	4	
52	Jean Delisle	44	do do	7	7	3	Master, SS. "Greetlands."
53	Nazaire Curodeau	42	Quebec	5	7	4	
54	Charles Normand	43	do	10	11	3	Employed, all the season, by a Collier.
55	Napoléon Rioux	44	Ste. Pétronille, Orleans	5	5	5	
56	Jean-Bte. Tremblay	46	Quebec	9	9	3	Employed, all the season, by the Black Diamond Line of Steamers.
57	Ray. Baquet *dit* Lamontagne	44	Notre-Dame, Lévis	15	14	2	Employed, all the season, by the Beaver Line of Steamers.
58	Frs.-Xav. Lamarre	43	St. Valier	8	6	3	Employed, all the season, by the Donaldson and Ross Line of Steamers.
59	Moïse Pouliot	41	St. John, Orleans	12	7	3	Emyloyed, all the season, by the Allan Line of Steamers.
60	Paul Gobeil	43	do do	5	5	4	
61	Chas. Alaric Raymond	41	Quebec	5	5	4	
62	Victor Vézina	44	do	10	8	2	Employed, all the season, by the Allan Line of Steamers.
63	Louis Honorius Lachance	51	St. Michel, Bellechasse	13	13	4	Employed, all the season, by a Collier.
64	L. B. O. Goutron *dit* Larochelle	43	do do	11	7	3	Employed, all the season, by the Allan Line of Steamers.
65	Chas. Hermie *alias* A. Bernier	44	do do	5	6	5	
66	Louis Robert Demers	43	Quebec	0	0	0	Master, Government Steamer "Druid."
67	Vital Emphrem Chamberland	49	Montreal	6	6	4	
68	Joseph G. Dupil	42	Quebec	7	9	3	Employed, all the season, by the Allan Line of Steamers.
69	Jean-Bte. Talbot	44	Berthier	0	0	0	One of the Directors of the Corporation of Pilots. Re-elected at last election.
70	Joseph Fortier	45	St. John, Orleans	0	0	0	One of the Directors of the Corporation of Pilots. Re-elected at last election.
71	Nestor Lachance	44	do do	8	8	3	Master, SS. "Polino."
72	Cyrille Audet *dit* Lapointe	44	St. Michel, Bellechasse	6	4	5	
73	Joseph Lapointe	46	St. Laurent, Orleans	5	5	5	
74	Pierre Pepin *dit* Lachance	40	Montreal	5	7	4	Employed, all the season, by a Collier.
75	Théophile Gourdeau	45	Lauzon, Lévis	5	5	4	
76	Isiode Noël	39	St. John, Orleans	5	5	4	

113	Léon Labrecque	39	St. Laurent, Orleans	7	4	5	
114	Paul Lachance	34	St. John, Orleans	12	13	2	Employed, all the season, by a collier.
115	Joseph Pouliot	33	do	5	5	4	
116	Joseph Larochelle	32	St. Michel, Bellechasse	9	8	3	do do do
117	Adjutor Lachance	31	do do	11	8	3	Employed, all the season, by the Hansa Line of Steamers.
118	François Gaudreau	38	Quebec	5	5	4	
119	Arthur Koenig	38	L'Islet	5	5	4	
120	Eugène Anctil	31	St. Jean Port Joly	5	4	5	
121	David Dumas	36	Notre-Dame, Lévis	2	5	4	
122	Joseph Lachance	35	St. Laurent, Orleans	6	5	3	
123	Paul Pâquet	31	St. John, Orleans	5	5	5	
124	Alphonse Pouliot	37	do	5	5	5	
125	Ebzéar Normand	30	L'Islet	5	3	5	Suspended, the 26th October, for the space of 18 calendar months.
126	Jean Bernier	30	L'Islet	16	12	2	Employed, all the season, by the Donaldson and Ross Line of Steamers.
127	Joseph Pâquet	28	St. John, Orleans	5	6	5	
128	Jean A. Lachance	27	Quebec	4	5	4	
129	Arthur Baillargeon	32	Ste. Pétronille, Orleans	1	0	0	Master, all the season, of one of the Pilot Schooners.
130	Joseph Vézina	28	St. Laurent, Orleans	6	3	5	
131	Herménégilde Guénard	31	St. Thomas, Montmagny	5	4	5	
132	Elzéar Desrosiers	36	Quebec	5	4	4	
133	John J. A. Irvine	33	Green Island	5	5	4	
134	Fréd. Bouffard	32	St. Laurent, Orleans	5	5	5	
135	Jules Asselin	28	St. Michel, Bellechasse	5	5	4	
136	Prudent Marmen	30	Beauport	4	3	5	
137	Lucien Lachance	28	St. John, Orleans	6	4	4	
138	Alfred Dion	31	Green Island	9	7	3	Employed, all the season, by a Collier.
139	Camille Bernier	31	St. Michel, Bellechasse	9	11	2	do the Dominion Line of Steamers.
140	Moïse Blouin	38	St. John, Orleans	5	5	5	
141	Moïse *alias* Laurent Godbout	29	Quebec	5	8	5	
142	Alfred Godreau	36	Cap St. Ignace	5	5	5	
143	Alfred Raymond	28	Kamouraska	5	4	5	
144	Philéas Lachance	31	St. John, Orleans	6	4	5	
145	Joseph H. Talbot	27	Berthier	5	5	4	
146	Moïse Arthur Lachance	26	St. John, Orleans	6	4	5	
147	Louis Frs. Thivierge	23	do	5	5	5	
148	Laurent Larochelle	29	St. Michel, Bellechasse	6	5	5	
149	François *alias* Joseph N. Dallaire	28	St. Laurent, Orleans	5	5	4	
150	Joseph Emilien *alias* Emile Lachance	23	St. John, Orleans	5	5	4	
151	Alphonse Asselin	24	St. Michel, Bellechasse	5	6	5	
152	Edmond Larochelle	23	do	5	6	5	
153	Joseph Plante	23	St. Paul's Bay	6	4	5	
154	Narcisse Desprès	25	St. Joseph, Lévis				Suspended, the 18th May, for the remainder of the season of navigation.
155	Alphonse Pâquet	23	St. John, Orleans	5	6	4	
156	Paul *alias* Napoléon Pouliot	30	do	5	5	5	
157	Arthur Dorion	33	St. Joseph, Lévis	5	5	4	
158	Adélard Bernier	28	Quebec	5	4	5	

Office of the Harbour Commissioners, Quebec, 2nd January, 1890.

Certified, A. H. VERRET,
Secretary-Treasurer.

STATEMENT showing the Number of Pilots for and below the Harbour of Quebec, &c.—*Continued.*

Number.	Name.	Age.	Residence.	Number of Pilotages Effected.			Casualties and Remarks.
				Inwards.	Outwards.	Movages.	
77	Jean Evariste Adam	45	Trois Saumons	5	5	4	
78	Alfred Larochelle	39	St. Michel, Bellechasse	14	15	3	Employed, all the season, by the Beaver Line of Steamers.
79	Théophile Corriveau	42	Quebec	6	4	4	
80	Elzéar Godbout	41	do	4	9	5	
81	George Couillard Deprès	41	Bienville, Lévis	4	5	4	
82	Pierre Gobeil	41	St. John, Orleans	5	4	4	
83	Théodule Pepin *dit* Lachance	44	Montreal	5	5	5	
84	Achille Trefflé Simard	38	St. Joseph, Lévis	6	4	4	
85	Jean-Baptiste Patoine	38	Bienville, Lévis	8	7	3	Employed, all the season, by the Black Diamond Line of Steamers.
86	Narcisse Lavoie	40	Ste. Luce, Rimouski	1	0	0	Master, all the season, of one of the pilot schooners.
87	Joseph Emilio Couillard	38	Quebec	10	9	3	Master SS. "Thames."
88	Louis Albert Royer	44	St. John, Orleans	5	5	3	
89	Adélard Sansterre	39	St. Michel, Bellechasse	9	9	2	Employed all the season, by the Allan Line of Steamers.
90	Onésime Noël	37	St. John, Orleans	5	6	5	
91	Napoléon Baillargeon	39	Ste. Pétronille, Orleans	4	6	4	
92	David F. Pelletier	37	Lauzon, Lévis	6	5	6	
93	Joseph Frs.-Xav Bernier	37	Quebec	13	18	3	do do by the Donaldson and Ross Line of Steamers.
94	François-Xavier Demeule	37	St. John, Orleans	5	5	5	
95	Louis Honoré Lapierre	39	Notre-Dame, Lévis	5	8	6	Fined $40 and costs, the 15th July.
96	Joseph Eugène Lachance	35	St. John, Orleans	5	5	4	Elected, at last election, one of the directors of the Corporation of Pilots.
97	David Arthur Bouffard	35	St. Laurent, Orleans	5	5	5	
98	Jean Théophile St. Laurent	38	Quebec	11	9	3	Employed, all the season, by the Allan Line of Steamers.
99	Jacques Georges Dugas	37	Ste. Anne, Lapocatière	5	4	5	Fined $10 and costs, the 29th August.
100	Joseph Victor Gourdeau	42	Ste. Pétronille, Orleans	6	5	5	
101	Louis *alias* Trefflé Delisle	35	Trois-Pistoles	0	0	0	Master Red Island lightship.
102	Jean-Baptiste Couillard	38	Cap St. Ignace	5	5	5	
103	Charles Pelletier	39	Quebec	5	5	4	
104	Joseph *alias* Philéas Langlois	43	St. John, Orleans	5	5	4	
105	Nazaire Delisle	40	do	5	4	4	
106	J. E. Bonaventure Lavoie	37	Ste. Luce, Rimouski	5	4	5	
107	Adjutor Baillargeon	35	Ste. Pétronille, Orleans	0	0	0	One of the directors of the Corporation of Pilots. Re-elected at last election.
108	Samuel Rioux	36	Quebec	6	6	19	
109	Charles Octave Clavet	35	St. Michel, Bellechasse	7	8	3	Employed, all the season, by a collier.
110	Joseph Dion	33	Notre-Dame, Lévis	12	12	3	do do do
111	Paul Lachance	33	Quebec	0	0	0	Master, all the season, of one of the pilot schooners.
112	Arcadius Jouvin	31	Ste. Luce, Rimouski				

APPENDIX No. 13.

REPORT OF THE PILOTAGE AUTHORITY OF ST. JOHN, N.B., FOR THE CALENDAR YEAR ENDED 31ST DECEMBER, 1889.

OFFICE OF PILOTAGE AUTHORITY,
DISTRICT OF ST. JOHN, 2nd January, 1890.

SIR,—I beg to hand you herewith our annual return for pilotage for this district, for the year ending the 31st December, 1889.

I have the honour to be, Sir,
Your obedient servant,
J. U. THOMAS,
Secretary, St. John Pilot Commissioners.

WM. SMITH, Esq.,
Deputy Minister of Marine,
Ottawa.

RECEIPTS and Expenditure for the Year ending 31st December, 1889.

	Amount.	Total.
RECEIPTS.	$ cts.	$ cts.
Licenses to 31 pilots, at $5	105 00	
do 5 boats at $10	50 00	
25c. per foot on outward pilotage from the Port of St. John to date	1,889 34	
do do do Musquash do	16 12	
Outward pilotage, Bk. "David Taylor"	19 00	
Transport, SS. "North Erin"	10 40	
Interest on Dominion Savings' Bank deposits, 12 months to 1st July, 1889	271 52	
		2,411 38
EXPENDITURE.		
Pensions to 2 pilots	280 00	
do 7 widows	548 00	
do 2 children	40 00	
Printing, stationery, etc	15 25	
Auditing accounts, 1888	25 00	
Office rent, 1 year	100 00	
Salary, Secretary-Treasurer, 1 year	800 00	
Interest on deposit in Dominion Savings' Bank	271 52	
		2,079 77
Balance		331 61
Total		2,411 38

Returns of Vessels arriving at the Port of St. John, subject to pilotage, for the Year 1889.

Description.	Number.	Amount.
		$ cts.
Schooners	302	
Brigs and brigantines	30	
Ships	31	
Barks and barkentines	113	
Steamers	65	
Total	541	
Amount of pilotage received		24,450 58
British.		
Schooners	75	
Brigs and brigantines	27	
Barks and barkentines	92	
Ships	23	
Steamers	44	
Total	261	
Amount of pilotage received		14,219 39
Foreign.		
Schooners	227	
Brigs and brigantines	3	
Ships	8	
Barks and barkentines	21	
Steamers	21	
Total	280	
Amount of pilotage received		10,231 19

J. U. THOMAS,
Secretary.

Pilots Licensed for the Pilotage District of St. John, for the Year 1889.

Name.	Age.	Residence.	Remarks.
Patrick Traynor	63	St. John, N.B.	
Thomas Traynor	36	do	
Samuel Rutherford	57	do	
Edward Fletcher	62	do	
Joseph Doherty	43	do	
John L. C. Sherrard	55	do	
James Doyle	53	do	
Henry Spears	38	do	
John Thomas	41	do	
James Murray	48	do	
Henry Thomas	58	do	
John Sproul	53	do	
Richard Scott	38	do	
Patrick Conlin	39	do	
James Reed	43	do	
John Spears	40	do	
Charles Daley	53	do	
William Lahey	60	do	
Richard Cline	64	do	
James McPartland	55	do	
James S. Spears	44	do	
Thomas J. Stone	36	do	
James E. Mantle	43	do	
William Quinn	42	do	
Philip G. Doody	49	do	
Daniel Mulherrin	63	do	
William Miller	38	do	
Alfred Cline	32	do	
William Scott	33	do	
Bartholomew Rogers	32	do	
James Bennett	32	do	
Martin Spears	32	do	
John McAnulty	50	Musquash, N.B	Licensed for Musquash only.

Rates of Pilotage in force 31st December, 1889, for the Pilotage District of St. John, N.B.

ON ALL SAILING VESSELS.

Inward—1st District	$1 50	per foot draught of water.	
2nd do	1 75	do	do
3rd do	2 25	do	do
Outward—To Partridge Island	1 25	do	do
Down the Bay (not compulsory)	2 00	do	do

Transporting—100 tons and under	$1 50
Over 100 do 200 tons	2 00
do 200 do 300 do	3 00
do 300 do 400 do	4 00

And 25 cents additional for every fifty tons such vessel shall measure over 400 tons.

ON ALL STEAMERS.

Inward—1st District	$1 50	per foot draught of water.	
2nd do	2 50	do	do
3rd do	3 00	do	do
Outward—To Partridge Island	1 75	do	do
Down the Bay (not compulsory)	2 75	do	do

Transporting—100 tons and under	$2 00
Over 100 do 200 tons	2 50
do 200 do 300 do	3 75
do 300 do 400 do	5 00

And 30 cents additional for every fifty tons such steamer shall measure over 400 tons.

J. U. THOMAS, *Secretary.*

APPENDIX No. 14.

REPORT OF THE PILOTAGE AUTHORITY FOR THE DISTRICT OF MIRAMICHI, N.B., FOR THE YEAR ENDED 31ST DECEMBER, 1889.

NEWCASTLE, MIRAMICHI, N.B., 2nd January, 1890.

SIR,—I hand you herewith the Pilotage Returns of the Miramichi District for the year ended 31st December, 1889.

Your obedient servant,

R. R. CALL,

Secretary-Treasurer Pilotage Commissioners.

WM. SMITH, Esq.,
Deputy Minister of Marine.
Ottawa.

PILOTAGE Returns for the Pilotage District of Miramichi, N.B., for the Year ended 31st December, 1889.

No.	Names of Pilots.	Ages.	For what Licensed.	Remarks.
2	Louis Jimmo	35	Full License	
4	Angus McEachran	70	do	
5	Mitchell Martin	60	do	
6	Francis Martin	55	do	
7	Maxime Martin	44	do	
9	Angus McLean	56	do	
10	Alexander Wilson	43	do	
11	Robt. J. Walls	38	do	
12	George Savoy	45	do	
13	Reuben Nowlan	45	do	
14	John McEachran	39	do	
15	Chas. McLean	50	do	
20	Oliver Foster	48	do	
22	William Walls	35	do	
23	William Tait	66	do	
24	Allan McEachran, sen	55	do	
26	John McCullam	37	do	
27	James Nowlan	38	do	
28	Dudley P. Walls	43	do	
29	George Sutton	38	do	
30	James A. Nowlan	34	do	
31	George P. Tait	32	do	
32	Joseph Jimmo	34	do	
33	James McCullam	45	do	
34	Allan McEachran, jun	30	do	
35	John Martin	30	do	
36	Asa Walls	30	do	
37	William Walls, sen	32	do	
38	John Nowlan	33	do	
39	Patrick Nowlan	30	do	

Rates of Pilotage chargeable at Miramichi, N.B., on all Vessels, British or Foreign.

	$ cts.
When inward bound	2 25 per foot.
And for all vessels propelled wholly or in part by steam, in addition to above	0 02 per ton.
When outward bound	2 00 per foot.
For the Removal and Mooring—	
Vessels not exceeding 100 tons	1 50
do do 200 do	2 00
do do 300 do	3 00
do exceeding 300 do	4 00
And where the distance of removal exceeds four miles, 50 per cent. to be added to above rates.	
For every vessel taken to sea after 1st November a bonus of	4 00

List of Pilot Boats Licensed.

No.	Name of Boats.	Tonnage.	Captains.	When First Licensed.	When Last Licensed.
11	May Queen	22·50	Max. Martin	May, 1878	May, 1889
13	Two Brothers	25·	G. T. Tait	do 1878	do 1889
14	Empress	25·57	George Savoy	do 1878	do 1889
15	Princess Louise	20·85	R. J. Walls	do 1879	do 1889

Nationalities of Vessels Piloted Inwards during Year 1889.

Nationality.	Number	Nationality.	Number
British	98	American	2
Norwegian	57	Swedish	3
Italian	25	Spanish	2
German	1		
Russian	5		196
Australian	3		

Vessels reported Inwards, Outwards, Removals and Extra Services.

Description of Vessels.	Number	Description of Vessels.	Number
Inwards—		Removals—	
British steamers	27	British steamers	22
do sailing vessels	21	do sailing vessels	20
Foreign steamers	2	Foreign steamers	1
do sailing vessels	96	do sailing vessels	86
	196		129
Outwards—		Extra Services—	
British steamers	27	British steamers	3
do sailing vessels	64	do sailing vessels	4
Foreign steamers	2		
do sailing vessels	96		7
	189		

TOTAL Amount of Pilotage Inwards, Outwards, Removals and Extra Services.

Description of Vessels.	Amount.	Description of Vessels.	Amount.
	$ cts.		$ cts.
Inwards—		Removals—	
British steamers	1,490 58	British steamers	96 00
do sailing vessels	1,679 43	do sailing vessels	92 00
Foreign steamers	86 21	Foreign steamers	4 00
do sailing vessels	2,638 19	do sailing vessels	456 50
	5,894 41		648 50
Outwards—		Extra Services—	
British steamers	1,047 66	British steamers	23 12
do sailing vessels	1,804 74	do sailing vessels	37 75
Foreign steamers	71 00		
do sailing vessels	3,370 66		60 87
	6,294 06		

STATEMENT of Receipts and Expenditure for the Year ending 1889.

RECEIPTS.	$ cts.	EXPENDITURES.	$ cts.
Pilotage, inwards	5,894 41	Paid J. S. Henderson, surveying 4 boats	10 00
do outwards	6,294 06	Geo. Watt, amount of account	9 00
do removals	648 50	H. A. Muirhead, account of "May Queen"	46 53
Extra services	60 87	W. S. Loggie, amount of account	2 00
Amount earned by pilots outside of pilotage	690 00	Robt. J. Walls	5 00
		For spar	7 00
		D. G. Smith, account for printing	6 00
		Searle, office rent	20 00
		Bal. of wages "Princess Louise"	6 00
		Angus McEachran, amt. of account	6 75
		D. G. Smith, amount of account	1 50
		Pilot ledger	3 25
		Miramichi S. N. Co., amt. of account	10 75
		J. B. Snowball, expenses of steamship "Dorcus"	4 12
		W. C. Onslow, account for printing	1 75
		Alex. Martin, pension	100 00
		Amount of fishing special account	114 33
		Sec.-Trea., 3 p. c. on $13,587.84	407 63
		Amount paid 30 pilots	12,826 23
	13,587 84		13,587 84

R. R. CALL,
Secretary and Treasurer.

WM. PARK,
Chairman.

APPENDIX No. 15.

REPORT OF THE PILOTAGE AUTHORITY OF BATHURST, N.B., FOR THE CALENDAR YEAR ENDED 31ST DECEMBER, 1889.

STATEMENT of the number of Vessels brought from and taken to Sea by each Pilot, and Amount of Fees collected, Season of 1889.

Name of Pilot.	Foreign Vessels, Inwards.		Foreign Vessels, Outwards.		British Vessels, Inwards.		British Vessels, Outwards.		Total Vessels.	Total Fees.
	No.	Fees.	No.	Fees.	No.	Fees.	No.	Fees.		
		$ cts.		$ cts.		$ cts.		$ cts.		$ cts.
Timothy Daly										
Fred. Ronalds										
Wm. H. Daly.....	28	325 20	27	480 20	3	45 80	3	39 00	31	890 20
Fabien Hachey.....										
Nazare Hachey.....										

EDWARD HICKSON,
Secretary.

BATHURST, N.B., 31st December, 1889.

APPENDIX No. 16.

PILOTAGE RETURNS FOR THE PILOTAGE DISTRICT OF THE COUNTY OF CHARLOTTE, FOR THE YEAR ENDED 31ST DECEMBER, 1889.

St. Andrew's N.B., 31st December, 1889.

Sir,—Annexed I have the honour to hand you Pilotage Returns for the District of the County of Charlotte.

I am, Sir,

Your obedient servant,

C. S. O. HATHEWAY,

Commissioner and Acting Secretary.

Wm. Smith, Esq.,
Deputy Minister of Marine,
Ottawa.

Pilotage Returns for the District of the County of Charlotte, N.B., for the Year ending 31st December, 1889.

Licensed Pilots.	Residence.	District Licensed for.
Joseph Boyd	Campobello	County of Charlotte..
John Boyd	Dufferin	do

Pilot Boats Licensed.

Pilot Schooner "Frederick Taylor," 12½ tons, Joseph Boyd, Master.

Pilotage Collected by Pilots for current Year.

Name of Pilot.	British Vessels.	Foreign Vessels.	Total.
	$ cts.	$ cts.	$ cts.
John Boyd	297 00	19 00	
Joseph Boyd	434 25	120 00	
Total	731 25	139 00	870 25

Receipts by Pilotage Authority.

License for one pilot boat	$5 00	
do pilot	6 00	
One set of regulations	1 00	
		$12 00

Charges.

Stationery and postage	$0 50	
Paid Commissioner at St. Stephen and St. George	4 00	
do and Secretary at St. Andrew's	7 50	
		$12 00

Rates of Pilotage in the District.

First Pilotage District, inwards or outwards, $2.25 per foot draft of water.
Second do do 1.60 do
Third do do 1.50 do
From or to Campobello 20c. per foot less than above rates.
Fourth Pilotage District, inwards or outwards, $1 per foot draft of water.
From 1st November to 1st April 20c. per foot in addition to above rates.

To or from St. Andrew's Harbour to ballast ground, vessels 80 tons and under 300 tons, $2.50 each ; 300 tons and upwards, $3 each.

Removing a vessel from one loading place or harbour to any other loading place or harbour, inside St. Andrew's Bay, vessels 80 tons up to 200 tons, $4; over 200 tons and up to 300 tons, $5 ; over 300 tons and up to 400 tons, $4 ; exceeding 400 tons, $8 each.

Removing a vessel from any loading place inside St. Andrew's Bay to any harbour or loading place outside St. Andrew's Bay and within the county, pilotage inwards or outwards, vessels 80 tons and under 200 tons, $6 ; 200 tons and under 300 tons $8 ; 300 tons and under 400 tons, $10 ; 400 tons and upwards, $12.

C. E. O. HATHEWAY,
Commissioner and Acting Secretary.

St. Andrew's, N.B., 31st December, 1889.

APPENDIX No. 17.

REPORT OF THE HALIFAX PILOTAGE COMMISSIONERS, FOR THE CALENDAR YEAR ENDED 31st DECEMBER, 1889.

HALIFAX, N.S., 11th January, 1890.

DEAR SIR,—I beg leave to transmit, for the information of the Department, the annual returns of the Pilotage Authority of the District of Halifax, N.S., viz:—

Statement of Receipts and Expenditure.
Statement of Superannuation Fund.
Statement of Net Receipts of Pilots.
Return of Vessels inward, British and Foreign.
Return of Vessels outwards, British and Foreign.
List of Licensed Pilots.

Respectfully, &c., &c.,
Your obedient servant,
J. TAYLOR WOOD,
Secretary-Treasurer.

The Honourable
The Minister of Marine and Fisheries,
Ottawa.

STATEMENT of Receipts and Expenditure for Year ended 31st December, 1889.

EXPENDITURE.	$ cts.
To Amount paid Commissioners for 1888	1,000 00
do Auditor for 1888	30 00
Secretary's salary, $500, and office rent, 1889, $276	776 00
Steamboat hire and expenses visiting pilot stations	106 85
Painting office, fuel, printing, &c., &c	153 44
Surplus at credit of Pilotage Fund	4,143 80
	6,210 09
RECEIPTS.	
By Cash on hand January, 1889	1,137 33
Dominion 4 per cent. stock	1,000 00
Deposit Savings Bank	1,651 95
Outward pilotage on ships taking no pilots	1,330 15
5 per cent. commission on pilotage collected	984 62
Interest 4 per cent. stock and amount Savings Bank	106 04
	6,210 09
By Surplus at credit of Pilotage Fund	4,143 80

E. and O. E.

Statement of Superannuation Fund.

		$ cts.
By Cash Savings Bank, 1st January, 1889		3,218 61
Cash Union Bank, 1st do 1889		314 66
Cash collected 2 per cent. during 1889		390 79
Interest savings bank		128 72
		4,052 78
Less—Paid family late Pilot Smith	$56 25	
do do Nickerson	60 00	
		116 25
		3,936 53
By Balance Savings Bank		3,347 33
do Union Bank (special deposit)		400 00
do do		189 20
		3,936 53
Increase for the year		403 26

E. and O. E.

Net earnings of Pilots for 1889.

No. of Pilot Boats.	Net Earnings.	Number of Men.	Net Earnings per Man.
	$ cts.		$ cts.
No. 1. Boat "Cambridge"	4,733 32	6	788 89
do 2, do "Micmac"	4,171 35	5	821 42
do 3, do "Genesta"	5,109 55	6	851 59
do 4, do "Annie Gaetz"	4,306 78	5	861 35
Total net earnings for 1889	18,321 00	22	*832 77

*Average per man. E. and O. E.

Return of Vessels entered Inward at the Port of Halifax, N.S, from 1st January to 31st December, 1889, subject to compulsory Pilotage Dues.

BRITISH.

Schooner.	Brigantine.	Brig.	Barque.	Ship.	Steamer.	Tonnage.	Amount of Pilotage Dues.
							$ cts.
143	246		7	2	387	627,174	13,417 50

FOREIGN.

32	6	2	57		96	97,569	1,697 45
175	252	2	64	2	483	724,743	15,114 95

RETURN of Vessels entered Outward at the Port of Halifax, N,S., from 1st January to 31st December, 1889, subject to compulsory Pilotage Dues.

BRITISH.

Schooner.	Brigantine.	Brig.	Barque.	Ship.	Steamers.	Tonnage.	Amount of Pilotage Dues.
							$ cts.
	15	.....	7	2	387	496,123	4,907 25

FOREIGN.

3	6	2	57	0	96	90,572	1,007 10
9	21	2	64	2	483	586,695	5,914 35

LIST of Pilots for the Port of Halifax, N.S.

No.	Name.	Residence.	No.	Name.	Residence.
1	John Fleming.....	Ketch Harbour.	14	John Hayes.	Halifax.
2	*Wm. Fleming.....	do	15	James Spears.....	Ketch Harbour.
3	James Holland	Duncan's Cove.	16	John Beazley.....	Halifax.
4	William Baker.....	Halifax.	17	Charles Glazebrook.....	do
5	Bernard Gallagher.....	do	18	*Chas. F. Martin	Ketch Harbour.
6	Daniel Martin.....	Ketch Harbour.	19	William White.....	Ferguson's Cove.
7	Joseph Reno.....	Herring Cove.	20	Thomas Hayes	Herring Cove.
8	Patrick Hayes	do	21	T. Reno.....	do
9	Hugh Munro.....	do	22	Charles Martin.	Sambro.
10	Jeremiah Holland.....	Duncan's Cove.	23	*Henry Latter.....	Herring Cove.
11	Edward Bayers.....	Halifax.	24	John Johnson.	Bear Cove.
12	James Hanrahan.....	Ferguson's Cove.	25	*James Conway.....	Ferguson's Cove.
13	William Beazley.....	do	26	James Flemming.....	Ketch Harbour.

* Apprentices.

J. TAYLOR WOOD,
Secretary and Treasurer.

HALIFAX, N.S., January, 1890.

APPENDIX No. 18.

REPORT OF THE PILOTAGE AUTHORITY FOR DISTRICT OF GLACE BAY, C.B., FOR THE CALENDAR YEAR ENDED 31ST DECEMBER, 1889.

GLACE BAY, C.B., 10th January, 1890.

SIR,—Herewith I beg to forward returns of pilotage collected, pilots licensed and disbursement account, for this pilotage district, for year ended 31st December, 1889.

I have the honour to be, Sir,
Your obedient servant,
CHAS. H. RIGBY,
Secretary Board of Pilots.

The Honourable The Minister of Marine,
Ottawa.

Pilotage Collections for Year ended 31st December, 1889.

Date.	Tonnage.	Nationality.	Vessel, Name or Rig.	Pilotage,	Pilot.
1889.				$ cts.	
Mar. 24..	146	British	Brigantine Lillian	12 00	A. McPherson.
April 3..	90	do	Steamship Hercules	10 00	T. Ling.
do 17..	244	do	Brigantine Zanoni	16 00	J. Ryan.
do 24..	266	do	Steamship Harlaw	18 00	E. Petrie.
do 27..	92	do	Schooner Spring Bird	5 00	do
do 30..	120	do	do Maggie Millard	6 00	T. Shanahan.
do 30..	144	do	do William D.	6 00	J. Farrell.
May 8..	190	do	Steamship Kite	14 00	A. McLellan.
do 8..	114	do	Schooner Marie Vigilante	6 00	J. Farrell.
do 9..	181	do	Barkentine Viola	10 50	J. Ryan.
do 13..	90	do	Steamship Hercules	5 00	E. Petrie.
do 14..	22	do	Schooner Galetea	12 00	J. Shanahan.
do 14..	244	do	Brigantine Zanoni	16 00	T. Ling.
do 15..	155	do	Schooner Tom Ingraham	10 50	A. McLellan.
do 15..	170	do	Brigantine Highlander	14 00	J. Farrell.
do 17..	1,162	do	Steamship Geo. Clarkson	54 00	A. McLellan.
do 18..	190	do	do Kite	14 00	T. Ling.
do 20..	95	do	Schooner Dahlia	5 00	E. Petrie.
do 21..	205	do	Brigantine Eliza	16 00	J. Ryan.
do 21..	112	do	Schooner L. P. Churchill	6 00	E. Petrie.
do 22..	115	do	do Alice	6 00	J. Ryan.
do 25 .	980	do	Steamship Edmondsley	46 00	E. Petrie.
do 28..	338	do	Bigantine Venturer	15 00	T. Ling.
do 30..	1,410	do	Steamship Dedington	64 00	do
do 31..	1,132	do	do Tropic	52 00	J. Farrell.
June 1..	99	do	Schooner S. A. Morash	5 00	E. Petrie.
do 3..	1,162	do	Steamship Geo. Clarkson	54 00	A. McLellan.
do 3..	99	do	Schooner Edward Blake	6 50	J. Shanahan.
do 3..	121	do	do Avalon	9 00	J. Farrell.
do 3..	149	do	Brigantine Louise	6 00	T. Ling.
do 4..	190	do	Schooner Kite	14 00	J. Ryan.
do 5..	244	do	Brigantine Zanoni	16 00	T. Ling.
do 6..	116	do	Schooner C. Bernier	6 00	A. McLellan.
do 7..	980	do	Steamship Edmondsley	46 00	E. Petrie.
do 11..	1,410	do	do Dedington	64 00	J. Ryan.
do 13..	1,119	do	do Sir Francis Drake	52 00	A. McLellan.
do 14..	1,162	do	do Geo. Clarkson	54 00	J. Farrell.
do 15..	75	do	Schooner Louisa	4 00	E. Petrie.
do 18..	980	do	Steamship Edmondsley	46 00	T. Ling.
do 18..	110	do	Schooner Marie Erzelie	6 00	A. McLellan.
do 21..	244	do	Brigantine Zanoni	16 00	E. Petrie.
do 21..	1,143	do	Steamship Mondalay	52 00	J. Shanahan.
do 24..	1,410	do	do Dedington	64 00	T. Ling.
do 26..	1,119	do	do Sir Francis Drake	52 00	J. Farrell.
do 29..	99	do	Schooner Edward Blake	5 00	do
do 29..	980	do	Steamship Edmondsley	46 00	J. Ryan.
July 1..	280	Norwegian	Brig Frithgof	18 00	E. Petrie.
do 1..	354	British	Brigantine Echo	22 00	J. Shanahan.
do 3..	90	do	Steamship Hercules	10 00	J. Farrell.
do 3..	148	do	Schooner Dexter	9 00	T. Ling.
do 5..	1,410	do	Steamship Dedington	64 00	A. McLellan.
do 8..	190	do	do Kite	14 00	J. Ryan.
do 10..	1,162	do	do Geo. Clarkson	54 00	E. Petrie.
do 10..	980	do	do Edmondsley	46 00	J. Farrell.
do 11..	244	do	Brigantine Zanoni	16 00	J. Ryan.
do 12..	1,119	do	Steamship Sir Francis Drake	52 00	T. Ling.
do 15 .	95	do	Schooner Georginia	7 50	A. McLellan.
do 16..	1,410	do	Steamship Dedington	64 00	J. Farrell.
do 18..	139	do	Schooner Grace	12 00	T. Ling.
do 18..	99	do	do E. Blake	5 00	J. Farrell.
do 19..	81	do	do Marie Rose	4 00	E. Petrie.
do 22..	1,162	do	Steamship Geo. Clarkson	54 00	A. McLellan.
do 22..	980	do	do Edmondsley	46 00	J. Ryan.
do 23..	99	do	Schooner Orinoco	10 00	J. Farrell.

Pilotage Collected for Year ended 31st December, 1889—*Continued.*

Date.	Tonnage.	Nationality.	Vessel, Name and Rig.	Pilotage.	Pilots.
1889.				$ cts.	
July 24..	98	British... ...	Schooner Little Wonder.....	10 00	E. Petrie.
do 25..	1,132	do	Steamship Tropic	52 00	J. Shanahan.
do 25..	99	do	Schooner S. A. Morash.....	5 00	J. Farrell.
do 26..	98	do	do N. W. White	7 50	E. Petrie.
do 26..	1,410	do	Steamship Dedington.....	64 00	T. Ling.
do 26..	95	do ...	Schooner Georginia.....	5 00	J. Farrell.
do 29..	191	do	Brigantine Alego 1st.....	12 00	J. Ryan.
do 29..	150	do	Schooner Louise..... ...	14 00	J. Shanahan.
Aug. 1..	244	do	Brigantine Zanoni.....	16 00	J. Farrell.
do 1..	140	do	Schooner Bonnibel.....	3 00	J. Ryan.
do 2..	143	do	Brigantine Atlanta.....	6 00	A. McLellan.
do 3..	121	do	Schooner Princeport.....	3 00	T. Ling.
do 3..	96	do	do Mary Baker.....	7 50	J. Farrell.
do 3..	1,162	do	Steamship Geo. Clarkson.....	54 00	T. Ling.
do 5..	1,143	do	do Momdalay.....	52 00	J. Farrell.
do 6..	95	do	Schooner Cygnet	2 50	E. Petrie.
do 6..	1,410	do	Steamship Dedington.....	64 00	J. Shanahan.
do 8..	300	do	Brigantine Lillian	15 00	E. Petrie.
do 9..	121	do	Schooner Avalon	9 00	T. Ling.
do 9..	94	do	do Sarah Elizabeth.....	5 00	J. Ryan.
do 9..	190	do	Steamship Rite	14 00	E. Petrie.
do 12..	113	do	Schooner A. M. Brundrit.....	9 00	T. Ling.
do 13..	134	do	do Lillian	6 00	A. McLellan.
do 13..	132	do	Brigantine Crinbria.....	9 00	J. Farrell.
do 13..	117	do	Schooner Hattie F. Rich.....	9 00	A. McLellan.
do 13..	157	do	do Bella Rosa.....	10 50	E. Petrie.
do 14..	99	do	do Telephone.....	7 50	J. Ryan.
do 14..	71	do	do Ida Louise.....	6 00	T. Ling.
do 14..	136	do	do Agnes Cairns.....	9 00	J. Shanahan.
do 14..	99	do	do N. W. White	5 00	E. Petrie.
do 14..	148	do	do Dexter	3 00	J. Farrell.
do 20..	266	do	do Eva Maud.....	13 50	T. Ling.
do 20..	1,162	do	Steamship Geo. Clarkson.....	54 00	J. Shanahan.
do 21..	205	do	Brigantine Eliza..	16 00	T. Ling.
do 21..	87	do	Schooner Maria Catherina.....	7 50	E. Petrie.
do 23..	838	do	Bark Angelique	40 00	E. Petrie.
do 26..	569	do	Steamship Acadian.....	30 00	E. Petrie.
do 26..	112	do	Schooner L. P. Churchill.....	6 00	J. Farrell.
do 28..	1,162	do	Steamship Geo. Clarkson.....	54 00	A. McLellan.
do 29..	311	do	do Falcon.....	20 00	E. Petrie.
do 29..	1,119	do	do Sir Francis Drake.....	52 00	J. Ryan.
do 30..	114	do	Schooner Marie Vigilante..... ...	6 00	J. Farrell.
do 30..	98	do	do Mary Eleanor.....	5 00	E. Petrie.
do 30..	1,645	do	Steamship Haverton.....	72 00	T. Ling.
do 31..	92	do	Schooner Fury.....	7 50	J. Farrell.
do 31..	183	do	Barkentine Nelly.....	14 00	J. Ryan.
Sept. 2..	99	do	Schooner Orinocs...	7 50	A. McLellan.
do 2..	195	do	Barkentine Sponk...	14 00	J. Shanahan.
do 2..	58	do	Schooner Mary Alice.....	4 00	E. Petrie.
do 2..	293	do	do Francis.....	18 00	T. Ling.
do 2..	98	do	do Frsie.....	5 00	J. Farrell.
do 3..	879	do	Steamship Smeaton Tower.....	42 00	J. Shanahan.
do 3..	113	do	Barkentine M. A. Brundrit	9 00	R. McLellan.
do 4..	99	do	Schooner Flying Foam.....	10 00	J. Farrell.
do 5..	371	do	Brigantine Moss Rose.....	22 00	E. Petrie.
do 7..	569	do	Steamship Acadian.....	30 00	J. Shanahan.
do 7..	117	do	Schooner Hattie F. Rich.....	6 00	E. Petrie.
do 7..	980	do	Steamship Edmondsley.....	46 00	J. Ryan.
do 10..	343	do	do Eagle.....	20 00	E. Petrie.
do 10..	1,162	do	do Geo. Clarkson.....	54 00	T. Ling.
do 11..	241	do	Brigantine Acadian	12 00	J. Shanahan.
do 11..	110	do	Schooner Marie Erzelie	6 00	J. Farrell.
do 12..	113	do	do Dawn.....	6 00	J. Ryan.
do 12..	98	do	do N. W. White...	5 00	E. Petrie.

PILOTAGE Collected for Year ended 31st December, 1889—*Continued.*

Date.	Tonnage.	Nationality.	Vessel, Name and Rig.	Pilotage.	Pilot.
1889.				$ cts.	
Sept. 12..	702	British.....	Steamship Greetlands..	36 00	J. Farrell.
do 12..	80	do	Schooner Mary E. Power.....	5 00	J. Shanahan.
do 13..	1,119	do	Steamship Sir Francis Drake.....	52 00	A. McLellan.
do 13..	299	do	Brigantine Argyle	13 50	J. Ryan.
do 16..	97	do	Schooner Maud S.....	10 00	E. Petrie.
do 17..	569	do	Steamship Acadian...	30 00	T. Ling.
do 17..	134	do	Schooner Lillian.....	6 00	E. Petrie.
do 17..	109	do	do Isabella.....	6 00	J. Ryan.
do 18..	1,132	do	Steamship Tropic.....	52 00	J. Farrell.
do 19..	244	do	Brigantine Zanoni	16 00	J. Ryan.
do 20..	396	do	do Arbutus.....	22 00	T. Ling.
do 20..	107	do	Schooner Cyrene.....	6 00	J. Farrell.
do 20..	183	do	Barkentine Nelly..	14 00	J. Shanahan.
do 21..	117	do	Schooner Hattie F. Rich	6 00	J. Ryan.
do 21 .	216	do	do Sarah Wallace.....	12 00	A. McLellan.
do 21..	132	do	do T. Savard.....	6 00	J. Shanahan.
do 23..	1,162	do	Steamship Geo. Clarkson	54 00	A. McLellan.
do 23..	172	do	Brigantine Edith..	14 00	E. Petrie.
do 24..	607	American	Schooner Luther A. Roby.....	32 00	J. Ryan.
do 26..	148	British..... ..	do Dexter...	3 00	J. Farrell.
do 28..	420	American . . .	Barkentine Nelly E. Rumball	24 00	T. Ling.
do 28..	168	British.....	Schooner Alta.....	10 50	J. Ryan.
do 28..	97	do	do Maud S.....	5 00	E. Petrie.
do 30..	596	do	Steamship Acadian.....	30 00	J. Shanahan.
Oct. 1..	96	do	Schooner W. D. Richards.....	5 00	A. McLellan.
do 2..	124	do	do Rarslie..... ..	9 00	J. Ryan.
do 2..	97	do	do White Cloud.....	5 00	E. Petrie.
do 3..	87	do	do Laura C. Zwicker	5 00	J. Farrell.
do 3..	86	do	do Nellie B	5 00	T. Ling.
do 3..	99	do	do S. A. Morash	5 00	J. Shanahan.
do 8..	1,142	do	Steamship Mandaley.....	52 00	T. Ling.
do 8..	99	do	Schooner Mellacoree	5 00	E. Petrie.
do 9..	183	do	Barkentine Nelly....	14 00	J. Ryan.
do 10..	244	do	Brigantine Zanoni.....	16 00	E. Petrie.
do 10..	285	American	Schooner Lulu Annerman.....	13 50	J. Shanahan.
do 10..	1,162	British.....	Steamship Geo. Clarkson..... ...	54 00	A. McLellan.
do 10..	92	do	Schooner Alina.....	7 50	J. Farrell.
do 10..	96	do	do Dominion.	5 00	T. Ling.
do 12..	830	do	Steamship Bona Vista	40 00	J. Shanahan.
do 12..	122	do	Schooner Anita.....	9 00	J. Farrell.
do 12..	102	do	do Vanilla.....	6 00	E. Petrie.
do 12..	111	do	do Helena Maud	6 00	J. Ryan.
do 12..	87	do	do Bertie C. H.....	7 50	T. Ling.
do 14..	596	do	Steamship Acadian.....	30 00	T. Ling.
do 14..	97	do	Schooner Energy..... ..	7 50	J. Shanahan.
do 14..	205	do	Brigantine Eliza.....	16 00	E. Petrie.
do 14..	97	do	Schooner White Cloud	5 00	A. McLellan.
do 16..	87	do	do Laura C. Zwicker	5 00	J. Farrell.
do 17..	190	do	Steamship Kite.....	14 00	T. Ling.
do 18..	86	do	Schooner Nellie B	5 00	E. Petrie.
do 18..	931	do	Steamship Cacouna.....	44 00	J. Farrell.
do 18..	764	do . . .	Bark J. H. McLaren.....	38 00	T. Ling.
do 20..	87	do	Schooner C. W. Mader.....	5 00	J. Ryan.
do 20..	130	do	Steamship William	9 00	A. McLellan.
do 21..	354	do	Brigantine Echo.....	22 00	J. Ryan.
do 21..	98	do	Schooner Mellacoree.....	5 00	A. McLellan
do 22..	115	do	do Alma.....	6 00	E. Petrie.
do 22..	87	do	do Bertie C. H.....	5 00	T. Ling.
do 22..	96	do	do Dominion.	5 00	J. Farrell.
do 23..	211	do	do Tennie Parker.....	16 00	J. Shanahan.
do 23..	176	do	do Tennie S.....	14 00	J. Ryan.
do 23..	158	do	do Alta.....	7 00	T. Ling.
do 23..	98	do	do Fear Not..... ...	7 50	E. Petrie.
do 24..	158	do	do Sparkling Glance.....	10 50	A. McLellan.

PILOTAGE Collected for Year ended 31st December, 1889—*Continued.*

Date.	Tonnage.	Nationality.	Vessel, Name and Rig.	Pilotage.	Pilot.
1889.				$ cts.	
Oct. 24..	244	British	Brigantine Zanoni	16 00	J. Ryan.
do 26..	121	do	Schooner Avelon	9 00	E. Petrie.
do 26..	122	do	do Gatabea	6 00	J. Shanahan.
do 28..	167	do	do M. E. McLauchlin	7 00	E. Petrie.
do 28..	97	do	do Energy	7 50	T. Farrell.
do 29..	1,162	do	Steamship Geo. Clarkson	54 00	T. Ling.
do 29..	686	American	Schooner Jas. B. Gordon	34 00	A. McLellan.
Nov. 2..	89	British	do Ontario	5 00	T. Shanahan.
do 4..	87	do	do Bertie C. H.	5 00	J. Farrell.
do 4..	251	do	Barkentine Aureola	18 00	E. Petrie.
do 4..	96	do	Schooner Dominion	7 50	A. McLellan.
do 5..	86	do	do Nellie B.	5 00	T. Ling.
do 5..	111	do	do Helena Maud	6 00	E. Petrie.
do 6..	94	do	do Cepola	5 00	J. Farrell.
do 6..	89	do	do Samoa	5 00	A. McLellan.
do 6..	98	do	do Gatabea	7 50	T. Shanahan.
do 8..	190	do	Steamship Rite	14 00	T. King.
do 8..	97	do	Schooner Malabar	5 00	J. Farrell.
do 9..	111	do	do Kelso	6 00	J. Ryan.
do 11..	111	do	do Veritas	9 00	A. McLellan.
do 11..	98	do	do Mellacoree	5 00	T. Ling.
do 12..	81	do	do Lottie	5 00	J. Ryan.
do 15..	99	do	do Edward Blake	5 00	J. Farrell.
do 15..	398	do	Barkentine Culdoon	22 00	A. McLellan.
do 18..	244	do	Brigantine Zanoni	16 00	E. Petrie.
do 20..	131	do	Schooner Katie	6 00	A. McLellan.
do 21..	97	do	do Energy	7 50	J. Farrell.
do 21..	87	do	do C. W. Mader	2 50	T. Ling.
do 22..	87	do	do Bertie C. H.	5 00	A. McLellan.
do 23..	194	do	do Adria	7 00	J. Farrell.
do 23..	139	do	do Mary B.	3 50	T. Ling.
do 23..	123	do	do Asceola	6 00	A. McLellan.
do 23..	143	do	do Sower	6 00	A. McLellan.
do 25..	113	do	Brigantine Dawn	6 00	J. Shanahan.
do 27..	98	do	Schooner John Purney	5 00	E. Petrie.
do 27..	130	do	Steamship William	9 00	T. Ling.
do 29..	234	do	Brigantine Elrica	16 00	J. Ryan.
Dec. 4..	98	do	Schooner Mellacoree	5 00	E. Petrie.
do 4..	74	do	do T. B. Saint	1 00	A. McLellan.
do 5..	121	do	do Cashier	6 00	J. Shanahan.
do 5..	190	do	Steamship Rite	14 00	T. Ling.
do 7..	99	do	Schooner H. N. Batchelder	5 00	A. McLellan.
do 10..	86	do	do Bertie C. H.,	5 00	J. Farrell.
do 10..	80	do	do Edith Annie	5 00	J. Farrell.
do 11..	244	do	Brigantine Zanoni	16 00	J. Shanahan.
do 16..	102	do	Schooner A. L. Walters (2 trips)	15 00	A. McLellan.
do 16..	169	do	do Isaac Burpee	7 00	T. Ling.
do 16..	167	do	do Alta	7 00	E. Petrie.
do 17..	93	do	do Laura	5 00	J. Farrell.
do 17..	89	do	do Ontario	5 00	A. McLellan.
do 19..	161	do	Steamship Coila	7 00	T. Ling.
do 20..	83	do	Schooner Osceola	5 00	J. Shanahan.
do 21..	221	do	do Stella	12 00	J. Farrell.
do 28..	163	do	do Minnie	14 00	T. Ling.
				4,287 50	

RECAPITULATION.

		Tons.
64	British steamships	54,111
174	do sailing vessels	25,227
4	American sailing vessels	1,998
1	Norwegian sailing vessel	280
246		81,615

Pilots and other License Fees for the Year 1889.

License No.	Name of Pilot, &c.	Age.	Boats.	Fees.
				$ cts.
1	Edward Petrie	56	1	4 00
2	Joseph Shanrahan	50	1	4 00
3	John Ryan	42	1	4 00
4	Edmond Petrie	45	1	8 00
5	James Farrell	58	.....	3 00
6	Alex. McLellan	53	.....	3 00
7	Thos. Ling	49	1	4 00
8	Capt. McKinnon, British schooner "Fleetly"	.....	.....	10 00
9	do McGillivray do "J. L. Crossley"	.....	.....	10 00
				50 00

RECAPITULATION.

7 regular pilots (licenses renewed)	$21 00
4 open boats do	4 00
1 deck boat do	5 00
2 coasting schooners licenses	20 00
	$50 00

Disbursement Account for the Year 1889.

Date.	——	Amount.	Total.
1889.		$ cts.	$ cts.
May 1..	Balance from last year	2 00	
do 1..	7 pilot licenses	21 00	
do 1..	4 open boat licenses	4 00	
do 1..	1 deck boat license	5 00	
June 3..	License to British schooner "Fleetly"	10 00	
do 15..	do do "J. L. Crossley"	10 00	
			52 00
	Contra.		
Dec. 31..	Secretary's allowance	20 00	
do 31..	Commissioners' travelling expenses	15 00	
			35 00
	Balance to credit Pilotage Fund		17 00

Glace Bay, C.B., 31st December, 1889.

CHAS. H. RIGBY,
Secretary Pilotage Authority.

APPENDIX No. 19.

REPORT OF PILOTAGE AUTHORITY OF PICTOU, N.S., FOR THE CALENDAR YEAR ENDED 31ST DECEMBER, 1889.

OFFICE OF PILOTAGE AUTHORITY,
PORT OF PICTOU, N.S., 31st December, 1889.

SIR.—I have the honour to submit to you the Pilotage Returns, for the Port of Pictou, for year ended 31st December, 1889.

The regulations and rates of pilotage remain the same as when last reported.

Angus Smith, apprentice on boat No. 9, was granted a pilotage license to act as branch pilot No. 13, on 29th April, 1889.

I am, Sir,

Your obedient servant,

WM. H. NOONAN,
Secretary, P.A.P.D.

WM. SMITH, Esq.,
Deputy Minister Marine,
Ottawa.

RECEIPTS and Expenditures of all Moneys received by or on behalf of the Pilotage Authority in respect of Pilots or Pilotage.

RECEIPTS.	$ cts.
To Received from twelve pilots, renewing bonds	12 00
do Capt. Bacquet, license	40 00
do Angus Smith do	20 00
Received pilotage dues as per statement	2,230 87
Balance due secretary	58 72
	2,361 59
EXPENDITURES.	
By Paid Pilots for pilotage	2,017 87
do J. McK. Beattie, stationery	4 25
do "Pictou News," printing account	10 00
do Jno. W. Ross, *in re* "Black Prince"	5 00
do Office rent and fuel	50 00
do Secretary's salary	200 00
Balance due secretary from last year	74 47
	2,361 59

J. A. GORDON,
A. J. PATTERSON,
JOHN R. DAVIES,
HECTOR McKENZIE,
JAS. D. McGREGOR.
Pilotage Authority, Port of Pictou, N.S.

Total Amount received for Pilotage Dues for Season ending 1889.

	Amount.	Total.
	$ cts.	$ cts.
Of this amount—		
Received from sailing ships	615 00	
do steamships	1,615 87	
		2,230 87
Of this amount—		
Received from British ships	1,545 37	
do Foreign ships	685 50	
		2,230 87
Certified Masters—Amabel Bacquet, SS. "Miramichi."		
Certified Mates—Nil.		

Memorandum of Earnings of Pilots for 1889.

No.	Names.	Amount.
		$ cts.
1	Alexander T. Powell	
2	James Fraser	81 00
3	Bryant Rogers	95 00
4	Wm. A. Cooke	205 50
5	Angus McDonald	
6	Henry H. Powell	121 50
7	Charles A. Cooke	47 00
8	George W. Powell	44 00
9	Daniel S. Smith	1,031 76
10	Wm. Munro	60 50
11	Daniel McLeod	138 00
12	Angus Smith	193 61
		2,017 87

APPENDIX No. 20.

RETURN OF PILOTAGE FOR THE PILOTAGE DISTRICT OF ST. MARY'S AND LISCOMBE FOR THE YEAR ENDING 31ST DECEMBER, 1889.

CHARLES RILEY, Pilot for Liscombe.

Rig.	Name of Ship.	Registered Tonnage.	Port of Registry.	Inward.	Outward.	Total.
				$ cts.	$ cts.	$ cts.
Barque	Norro	481	Norway	11 00	13 00	24 00

EDWARD QUINN, Pilot No. 1 for St. Mary's.

Barque	Eros	285	Norway	7 00	9 00	16 00
do	Urania	312	do	8 00	10 00	18 00
do	Sirius	387	do		11 00	11 00
Tern. Schooner	Alianza	362	Spanish	9 00		9 00
Schooner	H. L. Langster	78	Dominion	5 46	5 46	10 92
do	L. G. C.	40	do	2 80	2 80	5 60
do	Fleetly	95	do	4 00	6 00	10 00
do	Sadie	43	do	3 01	3 01	6 02
do	Glide	29	do	2 03	2 03	4 06
						90 60

JOHN BURNS, Pilot No. 2.

Schooner	Amanda	38	Dominion, 5 cents per ton	1 90		1 90
do	Caboode	93	Dominion	4 00	6 00	10 00
do	Ellen Eliza	21	do 7 cents per ton	1 47	1 47	3 94
do	Monitor	36	Dominion	2 52	2 52	5 04
do	Standard	63	do	4 41		4 41
						25 29

ALFRED MCDANIEL, Pilot No. 3.

Barque	Sirius	387	Norway	9 00		9 00
Tern. Schooner	Alianza	362	Spanish		10 00	10 00
Schooner	J. W. Hill	78	Dominion	5 46	5 46	10 92
						29 92

WM. PRIDE,
Secretary to Pilot Commissioners.

APPENDIX No. 21.

REPORT OF THE PILOTAGE AUTHORITY FOR THE DISTRICT OF SYDNEY, C.B., FOR THE CALENDAR YEAR ENDED 31st DECEMBER, 1889.

OFFICE OF COMMISSIONER OF PILOTS,
SYDNEY, C.B., 13th January, 1890.

SIR,—I have the honor of waiting on you with the Pilotage returns of this District for the past year (1889), which I trust will be found in order.

I am, Sir,
Your obedient servant,
W. PURVES,
Sec.-Treasurer.

WM. SMITH, Esq.,
Deputy Minister of Marine,
Ottawa.

NAME and Age of the Pilots for the District of Sydney, C.B., for the Year 1889.

No.	Name.	Age.	No.	Name.	Age.
1	James Petrie	69	17	H. McGillvery	59
2	John Brown	67	18	J. D. McGillvery	43
3	D. Mullins	60	19	J. Carroll	38
4	J. Curran	63	20	G. Brown	52
5	J. Petrie	58	21	L. Connell	47
6	C. Mullins	58	22	Jas. Carroll	33
7	D. McGillvery	60	23	D. Petrie	33
8	W. Ratchford	52	24	J. McNeil	37
9	D. McGillvery	68	25	P. Burke	35
10	J. Cann	39	26	J. Shannahan	38
11	J. Mullins	39	27	P. Young	33
12	S. Shannahan	47	28	W. Brown	32
13	A. Ratchford	45	29	D. McInnes	63
14	J. Fraser	49	30	T. Ratchford	34
15	J. McGillvery	39	31	G. D. Townsend	41
16	A. McNeil	46	32	J. B. McGillvery	43

STATEMENT of Arrivals paying Pilotage, and Pilotage received in the District of Sydney, C.B., during the Year 1889.

SYDNEY, C.B.

Class of Vessels.	No.	Tonnage.	Pilotage.
			$ cts.
British steamers	59	50,963	
Foreign do	1	767	
British sailing vessels	32	5,255	
Total	92	56,985	
British vessels			1,898 50
Foreign do			40 00
Total pilotage			1,938 50

INTERNATIONAL MINES.

British steamers	69	87,760	
Foreign do	3	4,430	
British sailing vessels	16	2,033	
Total	88	94,223	
British vessels			3,000 50
Foreign do			164 00
Total pilotage			3,164 50

VICTORIA MINES.

British steamers	67	59,749	
Foreign do	8	9,009	
British sailing vessels	32	5,423	
Total	107	74,181	
British vessels			2,253 50
Foreign do			290 00
Total pilotage			2,543 50

NORTH SYDNEY.

British steamers	66	60,795	
Foreign do	20	26,720	
British sailing vessels	195	52,041	
Foreign do	32	14,554	
Total	313	154,010	
British vessels			3,754 50
Foreign do			1,336 50
Total pilotage			5,091 00

RECAPITULATION.

Ports.	No.	Tonnage.	Pilotage.
			$ cts.
North Sydney	313	154,010	5,091 00
Victoria	107	74,181	2,543 50
International	88	94,223	3,164 50
Sydney	92	56,985	1,938 50
Total	600	379,439	12,737 50

MASTERS LICENSES.

No.	Name.	Class.	Vessel.	Amount.
				$ cts.
1	J. P. Angrove	Steamship	St. Pierre	20 00
2	N. Lachance	do	Polino	20 00
3	D. Fraser	do	Coban	20 00
4	D. Anderson	do	Bonavista	20 00
5	E. Moore	Schooner	Fearnot	10 00
6	C. Ormiston	do	M. Millard	10 00
7	M. McDonald	Steamship	Cacouna	20 00
8	J. Milius	do	Acania	20 00
9	J. DeLislye	do	Greetlands	20 00
10	J. McGrath	Schooner	Jennie	10 00
			Total	170 00

STATEMENT of Receipts and Expenditure in connection with the Pilotage Authority of Sydney, C. B., for the year 1889.

RECEIPTS.	$ cts.	$ cts.
Received for licenses and bonds	93 00	
do boats'	26 00	
do masters' licenses	170 00	
Total pilotage	12,737 50	
		13,026 50
EXPENDITURE.		
Paid pilots by collector	11,839 85	
do collectors	623 15	
Collected for relief fund	274 50	
Office, rent and fuel	45 00	
Expenses of commissioners	150 00	
Books and printing	10 75	
Telegrams and postages	2 47	
Secretary and treasurer	100 00	
		13,045 72
Excess of Expenditure		19 22

STATEMENT of the Pilotage Account of the Pilotage Authority of Sydney, C. B., for for the year 1889.

1889.		$ cts.	1889.		$ cts.
June 1...	To D. McGillvery, retired....	20 00		By Balance.....	76 37
	Widow Brown	20 00		Relief fund.....	274 50
	do Daley.....	20 00		Collections, 1889.....	
	do Mullins	20 00		Interest on deposit.....	24 00
	do Madore.....	20 00			
Nov. 7...	T. Doyle, retired.....	50 00			
	D. McGillvery, retired....	20 00			
	G. Townsend.....	50 00			
Dec. 15...	Widow Brown.....	10 00			
	do Daley.....	10 00			
	do Mullins.....	10 00			
	do Madore..... ...	10 00			
	Refunded pilots, Mary Postel.....	5 00			
	Brunel	3 00			
	Max O'Rell.....	3 00			
	do	5 00			
	Exchange	3 45			
	Over expenditure.....	19 22			
	Balance.....	76 20			
		374 87			374 87
				By Balance down.....	76 20
				On deposit.....	600 00

W. PURVES,
Secretary and Treasurer.

NORTH SYDNEY, C. B., 13th January, 1890.

APPENDIX No. 22.

REPORT OF THE PILOTAGE DISTRICT OF NANAIMO, B.C., FOR THE CALENDAR YEAR ENDING 31ST DECEMBER, 1889.

NANAIMO, B.C., 9th January, 1890.

The Honourable
The Minister of Marine and Fisheries,
Ottawa.

SIR,—Accompanying Pilotage Returns of the Nanaimo Pilotage Authority for the year ending 31st December, 1889, in accordance with "The Pilotage Act, 1886."

I am, Sir,
Your most obedient servant,
C. C. McKENZIE,
Acting Secretary.

PILOTAGE RETURNS of the Nanaimo Pilotage Authority for the year ending 31st December, 1889, in accordance with the "Pilotage Act, 1886," Section 22:—

(*a* & *b*). Names and ages of Pilots, &c., and the service for which licensed:

Name.	Age.	Service.
John Sabiston, sen.	63	Harbour.
John Sabiston, jun.	36	District.
Wm. McLeod McDonald	49	do
Dan Morrison	49	do
John Wm. Glaholm	37	do

(*c*). Rates of Pilotage dues, &c.:

Half Pilotage	$ 1 00	per foot.
Full do	2 00	do
Gulf do	10 00	per diem.

Steamers running to Alaska pay $40 per month by special arrangement with Pilots.

(*d*). Total amount received for Pilotage dues, distinguishing amounts received from British ships and from foreign ships, &c.:

Pilotage dues received from British ships	$ 4,004 25
do do foreign ships	10,060 00
Total Pilotage dues	$14,064 25

(*e*). The Receipt and Expenditure of all money received by or on behalf of the Nanaimo Pilotage Authority, &c.:

RECEIPTS.

Balance from 1888	$ 417 09	
Pilotage dues for the year ending 31st December, 1889.	14,064 25	
Pilot licenses	40 00	
		$14,521 34

EXPENDITURE.

Paid Pilots	$12,969 30	
Commissioners	180 00	
Acting Secretary	120 00	
Treasurer	120 00	
Rent	120 00	
Stationery and postage	32 00	
Telegrams	10 00	
Licenses	40 00	
		$13,591 30
Balance on hand for 1890		$ 930 04

C. C. McKENZIE,
Acting Secretary.

APPENDIX No. 23.

REPORT OF THE PILOTAGE AUTHORITY OF VICTORIA AND ESQUIMALT FOR THE CALENDAR YEAR ENDED 31st DECEMBER, 1889.

VICTORIA, B.C., 7th January, 1890.

SIR,—I have the honour to transmit herewith the Pilotage Returns for the Pilotage District of Victoria and Esquimalt, in the Province of British Columbia, for the year ended 31st day of December, 1889, as required by Section 24, Chapter 54, of the Act 36 Victoria, and trust that the same will be found in due form and in ample season.

I have the honour to be, Sir,
Your most obedient servant,
EDGAR CROW BAKER,
Secretary-Treasurer Pilotage Authority.

WILLIAM SMITH, Esq.,
Deputy Minister of Marine,
Ottawa, Ont.

PILOTAGE RETURNS, Victoria and Esquimalt Pilotage District, B.C., 1st January to 31st December, 1889.

LICENSED PILOTS.

No.	Name.	Age.	Date of Issue.	Seniority.	Remarks.
1	James McIntosh....	61	23rd April, 1880...	9th Jan., 1873...	Originally a British Columbia Pilot.
2	John Thompson.....	40	23rd April, 1880...	4th Dec., 1878...	do do
3	James Ramsey.....	59	21st Oct., 1889....	9th June, 1873..	do do

N.B.—The foregoing is a list of licensed pilots, who are the only ones who have prosecuted such calling in the above-named district.

There are no Masters and Mates acting under license from this Pilotage Authority, all the certificates previously granted having expired by efflux of time.

Clauses I, II and III (page 213, Supplement to 19th Annual Report), with reductions on page 217 (Supplement to 20th Annual Report), and also those on pages 200 and 201 (Supplement to 21st Annual Report) apply to this year.

Same Acts and parts of Acts as last year apply to 1889, and list of exempted vessels and Puget Sound rates remain the same.

EDGAR CROW BAKER,
Secretary-Treasurer.

VICTORIA, B.C., 31st December, 1889.

DR. RECEIPTS AND EXPENDITURE, 1st January to 31st December, 1889. CR.

Date.	Nature of Receipt.	Amount.	Date.	Head of Service.	Amount.
1889.		$ cts.	1889.		$ cts.
Jan. 1 to Dec. 31	To Balance from last year	384 25	Jan. 1 to Dec. 31	By B. C. Pilots—Division *re* Puget Sound	384 25
do	Pilotage Dues under Clause IV	9,472 25	do	do Earnings as per receipts	8,525 01
do	Certificate Fees, Puget Sound Steamers	300 00	do	Expenses, investigations, 12 months	180 00
			do	Office expenses, fuel, gas, rent, &c	220 00
			do	Secretary-Treasurer, 12 months' services	547 24
			do	Printing, &c., for Pilots, 12 months	19 30
			December 31	Balance at credit of Pilotage Authority	280 70
		10,156 50			10,156 50

EDGAR CROW BAKER,
Secretary-Treasurer.

Approved and certified correct.
RODERICK FINLAYSON,
W. R. CLARKE,
R. P. RITHET,
} *Commissioners.*

VICTORIA, B.C., 7th January, 1890.

PILOTAGE DUES Collected, 1st January to 31st December, 1889.

Month.	British.	Foreign.	Total.	Remarks.
	$ cts.	$ cts.	$ cts.	
January	24 00	385 00	409 00	
February	28 00	407 50	435 50	
March	139 00	686 25	825 25	
April	32 00	542 00	574 00	
May	175 00	836 25	1,011 25	
June	99 50	760 50	860 00	N.B.—The total of $9,472.25 does not include a sum of $300 collected from the Puget Sound steamers.
July	141 00	833 50	974 50	
August	123 00	820 25	943 25	
eptember	244 50	745 00	989 50	
October	198 75	739 50	938 25	
November	95 00	615 25	710 25	
December	98 00	703 50	801 50	
Total	1,397 75	8,074 50	9,472 25	

EDGAR CROW BAKER,
Secretary-Treasurer.

VICTORIA, B.C., 31st December, 1889.

APPENDIX No. 24.

REPORT OF THE PILOTAGE AUTHORITY OF YALE AND NEW WESTMINSTER FOR THE CALENDAR YEAR ENDED 31ST DECEMBER, 1889.

VANCOUVER, B.C., 10th January, 1890.

SIR,—I have the honour to enclose pilotage accounts and statements for the year 1889, to 5th January, 1890.

I should have had my returns in to you by the 15th January, which is now hardly possible, but the pilots being out on duty, I did not get them all paid till a few days ago.

By later mail the Commissioners will forward to you a revised copy of our By-laws, which they will ask your honourable Government to confirm.

I am, Sir,

Your most obedient servant,

C. GARDNER JOHNSON,

Secretary, N. W. and Y. P. A.

WILLIAM SMITH, Esq.,
Deputy Minister of Marine,
Ottawa.

RECEIPTS and expenditure of all moneys received by or on behalf of the Pilotage Authority in respect of Pilots or pilotages, for the year ending 5th January, 1890:—

RECEIPTS.

Balance in cash	$ 0 02
do on hand in Bank	512 66
Pilotage dues	13,930 25
Licenses	25 00
	$ 14,467 93

EXPENDITURE.

Paid pilots	$ 12,538 28
Expenses	532 30
Balance on hand in Bank	1,397 35
	$ 14,467 93

BALANCE SHEET.

	Dr.	*Cr.*
Bank of British Columbia	$ 1,397 35	
Commission account		$ 1,904 65
Expense do	532 30	
License do		25 00
	$ 1,929 65	$ 1,929 65

PILOTAGE RETURNS, New Westminster and Yale Pilotage Authority, for 1889.

No. of License.	Name of Pilot.	Age.	Service.	Remarks.
3	William Ettershank.....	46	Licensed to pilot vessels of any description within the limits of the district.	Active service.
6	Angus McAllister.....	44		Retired, October, 1889, and certificate handed in.
10	James Gaudin.....	48		Retired to take command Government steamer, June, 1889.
11	Donald Urquhart.....	40		Active service.
12	James Ramsey	58		Resigned, November, 1889.
13	Thos. Bebbington.....	43		Active service.
14	George W. Robertson...	40		Just appointed.

Pilotage dues now in force are the same as was approved by Order in Council.

PILOTAGE Collected for 1889.

38	British vessels, inwards,	58,068	tons.....	$	1,994 50
96	Foreign do do	164,804	do		3,894 00
56	British do outwards,	60,747	do		2,828 25
142	Foreign do do	174,394	do		5,213 50
		458,013	tons.	$	13,930 25

Many vessels pass in free that are spoken out.

EARNINGS of Pilots, for 1889.

William Ettershank..	$ 5,665 00	gross,	twelve	months.
*James Gaudin.....	645 00	do	six	do
Thos. Bebbington.....	433 00	do	two	do
†James Ramsay.....	1,625 00	do	seven	do
‡Angus McAllister.....	1,384 50	do	eight	do
Donald Urquhart.....	4,177 75	do	twelve	do
	$ 13,930 25			

* Retired, June, 1889. ‡ Resigned, November, 1889. † Retired, October, 1889.
Pilot Robertson, being just appointed, has no showing so far.

C. GARDNER JOHNSON,
Secretary, Y. and N. W. P. A.

APPENDIX No. 25.

REPORT OF THE PILOTAGE DISTRICT OF THE PORT OF PRINCE COUNTY, PRINCE EDWARD ISLAND.

ALBERTON, P.E.I., 8th January, 1890.

SIR,—I have the honour to make the following report of the pilotage district of the port of Prince County, Prince Edward Island :—

Pilots : George Well, age 24; Charles Gallant, age 31; Edward Ireland, age 32, all for general service.

I enclose by-laws, showing rates, &c.

The total amount received by pilots during the year 1889 was $325.50.

I remain, Sir,

Your obedient servant,

JAMES F. WHITE,

Chairman Pilotage Commissioners.

WM. SMITH, Esq.,
Deputy Minister of Marine,
Ottawa.

APPENDIX No. 26.

REPORT of the Chairman of the Board of Examiners of Masters and Mates for the Twelve Months ending 31st December, 1889.

RESULT OF THE DIFFERENT EXAMINATIONS.

PORT.	Time.		Applications.		Certificates Granted.		Candidates Failing.		Fees.
	Month.	Day.	Master.	Mate.	Master.	Mate.	Master.	Mate.	
1888.									$ cts.
Halifax	December	4, 5	2	2	2	2			30 00
St. John	do	22, 24	1	2	1	2			20 00
1889.									
Yarmouth	January	2, 3	2	1	2	1			25 00
Halifax	do	10, 11	1	1	1			1	15 00
St. John	do	15, 16	1	1	1			1	15 00
Yarmouth	February	1, 2	1	2	1	1		1	20 00
Quebec	do	6, 7	1	1	1	1			15 00
Halifax	do	15, 16	3	3	2	2	1	1	40 00
St. John	do	19, 20		3		2		1	10 00
Halifax	March	28, 29, 30	4	4	3	4	1		45 00
St. John	April	1, 2	1	1		1	1		10 00
Yarmouth	do	3, 4		3		2		1	10 00
Quebec	do	19, 20, 22		4		4			20 00
St. John	do	24, 25	3	1	2		1	1	25 00
Halifax	May	1, 2	6	2	5	1	1	1	50 00
Yarmouth	do	16, 17		2		1		1	
St. John	do	20, 21	2	3	1		1	3	20 00
Halifax	June	3, 4	1	5		3	1	2	20 00
St. John	do	17, 18	3	4	3	4			40 00
Yarmouth	do	20, 21	3	1	1	1	2		35 00
Halifax	July	4, 5	4	2	4	2			50 00
St. John	do	16, 17	2	1	2	1			25 00
Yarmouth	do	19, 20	4	1	3	1	1		25 00
Halifax	August	1, 2	2	1	1		1	1	25 00
Yarmouth	do	20, 21	3	1	1	1	2		25 00
Halifax	September	13, 14, 16, 17	4	5	3	5	1		50 00
St. John	do	19, 20	6		4		2		60 00
Yarmouth	do	26, 27	7	2	4	1	3	1	50 00
Halifax	October	4, 7	3	2	2	1	1	1	30 00
St. John	do	25, 26, 28	3	2	2	2	1		30 00
Yarmouth	do	29, 30	4	2	3	2	1		25 00
Halifax	November	13, 14	3	2	3	1		1	40 00
St. John	do	26, 28	1	2	1			2	10 00
do	December	12, 13	1	3	1	3		1	25 00
Yarmouth	do	18	1	1	1			1	15 00
Halifax	do	20, 21, 22	2	4	2	4			35 00
Total			85	77	63	56	22	21	985 00

List of Certificates of Competency granted to Masters and Mates, Foreign Sea-going, during the twelve months ended 30th November, 1889.

Number of Certificate.	Date of Certificate	Name.	Grade.	Address.	Where Examination was Passed.	Fee.
	1888.					$ cts.
2613	Dec. 21..	William F. Watt	Master	Halifax, N.S	Halifax	10 00
2614	do 21..	Hector Campbell	Mate	Cape Traverse, P.E.I	do	5 00
2615	do 21..	David James Morris	Master	Windsor, N.S.	do	10 00
2616	do 21..	Joseph Smith Shaw	Mate	Hantsport, N.S.	do	5 00
2617	do 22..	Edwin H. Pittman	Master	Annapolis, N. S	Yarmouth	10 00
	1889.					
2618	Jan. 7..	Charles Lockhart	Mate	Rockport, N.B.	St. John	5 00
2619	do 7..	Elias Rawding	do	Clementsport, N.S.	do	5 00
2620	do 16..	Thomas D. Mossop	Master	Moodyville, B.C	Victoria	10 00
2621	do 18..	George Ed. Purdy	do	Bear River, N.S	Yarmouth	10 00
2622	do 18..	Silas M. Marsters	do	Newport, N.S.	Halifax	10 00
2623	do 18..	Ernest Kinney	Mate	Yarmouth, N.S.	Yarmouth	5 00
2624	do 21..	William W. Hopkins	Master	Barrington, N.S.	do	10 00
2625	do 24..	John J. Warwick	do	Stoke Newington, Eng.	St. John	10 00
2626	do 24..	William McBride	do	Harbourville, N.S.	do	10 00
2627	Feb. 12..	Samuel Purdy	do	Yarmouth, N.S.	Yarmouth	10 00
2628	do 12..	Nathan Patten	Mate	do	do	5 00
2629	do 12..	François X. Pouliot	Master	St. Jean, Isle of Orleans, Que.	Quebec	10 00
2630	do 12..	Joseph Bourgard	Mate	St. Michele, Que	do	5 00
2631	do 22..	Thomas R. Holloway	Master	Halifax, N.S.	Halifax	10 00
2632	do 22..	William H. Norcott	do	do	do	10 00
2633	do 22..	George M. Dexter	2nd Mate	Cheverie, N.S.	do	5 00
2634	do 22..	Frank R. B. Gardner	Mate	Liverpool, N.S.	do	5 00
2635	Mch. 1..	John J. Campbell	do	St. John, N.B	St. John	5 00
2636	do 1..	Alexander Thompson	do	do	do	5 00
2637	April 9..	Daniel D. Cochran	do	Halifax, N.S.	Halifax	5 00
2638	do 9..	Wilford L. McBurnie	do	do	do	5 00
2640	do 9..	Charles D. Bowers	do	do	do	5 00
2641	do 9..	David Waters	Master	Pictou, N.S.	do	10 00
2642	do 9..	Thomas Ed. Blagdon	do	Halifax, N.S.	do	10 00
2643	do 9..	Robert Salisbury	do	River John, N.S.	do	10 00
2644	do 16..	John Andrew Mooney	Mate	St. John, N.B	St. John	5 00

List of Certificates of Competency granted to Masters and Mates—*Continued.*

Number of Certificates.	Date of Certificate	Name.	Grade.	Address.	Where Examination was Passed.	Fee.
	1889.					$ cts.
2645	April 16..	Robert T. Bain	Mate	Yarmouth, N.S.	Yarmouth	5 00
2646	May 6..	Louis H. Lapierre	do	Levis, Que	Quebec	5 00
2647	do 6..	Paul Lachance	do	Quebec, Que	do	5 00
2648	do 6..	Emilio Couillard	do	do	do	5 00
2649	do 6..	Henry Crocker	Master	Sackville, N.B.	St. John	10 00
2650	do 6..	Dudley L. B. Wilbur	do	Dorchester, N.B	do	10 00
2651	do 16..	George C. Hawes	do	Halifax, N.S.	Halifax	10 00
2652	do 16..	John Thomas Rice	do	do	do	10 00
2653	do 16..	George Stupat	do	do	do	10 00
2654	do 16..	David Foote	do	Pictou, N.S.	do	10 00
2655	do 16..	Samuel G. Cox	do	Halifax, N.S.	do	10 00
2656	do 16..	William Mahon	Mate	Great Village, N.S.	do	5 00
2657	do 31..	Michael Brickley	Master	St. John, N.B	St. John	10 00
2658	do 31..	Knowles B. Crosby	Mate	Yarmouth, N.S.	Yarmouth	5 00
2659	June 4..	Jesse W. Jones	Master	Weymouth, N.S	St. John	10 00
2660	do 11..	James C. Vickers	Mate	Halifax, N.S.	Halifax	5 00
2661	do 11..	James W. McKenzie	do	Pictou, N.S.	do	5 00
2662	do 11..	Charles Hansen	do	Halifax, N.S.	do	5 00
2663	do 27..	William McVicar	Master	St. George, N.B	St. John	10 00
2664	do 27..	Everett E. Thompson	do	Economy, N.S.	do	10 00
2665	do 27..	John E. Curtis	Mate	Damariscotta, Me., U.S.	do	5 00
2666	do 27..	John E. G. Letson	do	Chatham, N.B.	do	5 00
2667	do 27..	Raymond E. B. Holder	do	St. John, N.B	do	5 00
2668	do 27..	Patrick Ed. McMurray	do	do	do	5 00
2669	do 27..	William L. G. Reed	do	do	do	5 00
2670	do 27..	Edgar Godfrey	Master	Brooklyn, N.S	Yarmouth	10 00
2671	do 27..	John E. O'Dell	Mate	Bear River, N.S	do	5 00
2672	July 15..	Oscar Smith	Master	Mount Denson, N.S.	Halifax	10 00
2673	do 15..	Charles McDonald	do	Main-à-Dieu, C.B.	do	10 00
2674	do 15..	Thomas S. Lawrence	do	Maitland, N.S.	do	10 00
2675	do 15..	George H. Marsters	Mate	Hantsport, N.S.	do	5 00
2676	do 15..	Joseph Monteith	do	Maitland, N.S.	do	5 00

LIST of Certificates of Competency granted to Masters and Mates—*Continued.*

Number of Certificate.	Date of Certificate	Name.	Grade.	Address.	Where Examination was Passed.	Fee.
						$ cts.
2677	July 15..	James W. Anderson.....	Master.....	Pictou, N.S.....	St. John.....	10 00
2678	do 17..	Horace B. Crosscup.....	Mate.....	St. John, N.B.....	do	5 00
2679	do 17..	Jesse E. Anderson.....	Master.....	Sackville, N.B.....	do	10 00
2680	do 17..	Henry C. M. Almon.....	do	St. John, N.B.....	do	10 00
2681	Aug. 2..	Almond W. Wyman.....	do	Yarmouth, N.S.....	Yarmouth....	10 00
2682	do 2..	Lindsay R. Perry.	do	do	do	10 00
2683	do 2..	Norman S. Purdy.....	do	do	do	10 00
2684	do 2..	John S. Nickerson.....	Mate.....	Port La Tour.....	do	5 00
2685	do 8..	John A. Liswell.....	Master.....	Burlington, N.S	Halifax.....	10 00
2686	do 26..	Louis R. Demers	Mate.....	Quebec.....	Quebec.....	5 00
2687	do 29..	Frank E. Landers.....	do	Yarmouth, N.S.....	Yarmouth....	5 00
2688	do 29..	Charles E. Ross	Master.....	St. Andrews, N.B.....	do	10 00
2689	Sept. 24..	Samuel Vint	do	Port Patrick, G.B.....	St. John.....	10 00
2690	do 25..	Alvin S. Fielden..	Mate.....	Hantsport, N.S.....	Halifax.....	5 00
2691	do 25..	Benjamin Terfry	Master.....	do	do	10 00
2692	do 25..	Melville F. Cutler.....	do	Arichat, N.S	do	10 00
2693	do 25..	James B. Kehoe.....	Mate.....	Maitland, N.S.....	do	5 00
2694	do 25..	James F. Curtis.....	do	Charlottetown, P.E.I...	do	5 00
2695	do 25..	Fred. N. Malcolm.....	do	Cheverie, N.S.	do	5 00
2696	do 25..	Walter Cochrane.....	do	Newport, N.S	do	5 00
2697	do 25..	Augus C. Campbell.	Master.....	Halifax, N.S.....	do	10 00
2698	do 25..	Fenwick S. Sulis.....	do	St. John, N.B	St. John.....	10 00
2699	do 25..	George C. Macdonald.....	do	do	do	10 00
2700	do 25..	William Hy. Gerard.....	do	do	do	10 00
2701	Oct. 15..	Charles James Moses	do	Yarmouth, N.S.....	Yarmouth....	10 00
2702	do 15..	John M. Hensley.....	do	Windsor, N.S.....	do	10 00
2703	do 15..	Wm. W. Mundy..	do	Annapolis, N.S.....	do	10 00
2704	do 15..	Jacob Wilson Salter.....	do	Diligent River, N.S.....	do	10 00
2705	do 15..	William A. Horn.....	do	Halifax, N.S.....	do	10 00
2706	do 15..	Loren C. Caddell.....	do	Maitland, N.S.....	Halifax.	10 00
2707	do 15..	Harry A. Corbin.....	Mate.....	Aylesford, N.S.....	Yarmouth....	5 00
2708	do 15..	John Pratt	2nd Mate...	Cheverie, N.S	Halifax.....	5 00

LIST of Certificates of Competency granted to Masters and Mates—*Continued.*

Number of Certificates.	Date of Certificate	Name.	Grade.	Address.	Where Examination was Passed.	Fee.
	1889.					$ cts.
2709	Nov. 9..	Stuart G. Fulton	Master	Londonderry, N.S	St. John	10 00
2710	do 9..	John O'Donnell	2nd Mate	Hantsport, N.S	do	5 00
2711	do 9..	David A. Kerr	Master	Brooklyn, N.S	do	10 00
2712	do 9..	James Joseph Cremer	2nd Mate	St. John, N.S	do	5 00
2713	Dec. 2..	Frank Bolt Baker	Mate	Yarmouth, N.S	Yarmouth	5 00
2714	do 2..	Andrew Sinclair	Master	Cheshire, Eng	do	10 00
2715	do 2..	John Winter Ellis	Mate	Yarmouth, N.S	do	5 00
2716	do 2..	Edmund E. Manning	Master	Bridgewater, N.S	do	10 00
2717	do 2..	Farnum Hubbard Patten	do	Hebron, N.S	do	10 00
2718	do 4..	Charles Lorway	Mate	Sydney, C.B	Halifax	5 00
2719	do 4..	Ferdinand Ludwig Iverson	Master	Halifax, N.S	do	10 00
2720	do 4..	William M. Cronin	do	Bridgewater, N.S	do	10 00
2721	do 4..	John William McKenzie	do	Pictou, N.S	do	10 00
2722	do 6..	Anders M. Anderson	do	St. John, N.B	St. John	10 00

List of Certificates of Service granted to Masters and Mates, foreign sea-going, for the twelve months ended 30th November, 1889.

Number of Certificate.	Date of Certificate	Name.	Grade.	Address.	Where Examination was Passed.	Fee.
	1888.					$ cts.
1432	Dec. 22..	Benjamin Palmer.....	Master, not exceeding 150 tons, and mate, any tonnage.	Halifax, N.S....	Halifax, N.S..	5 00
1433	do 26..	James W. Lohnes	Master, fore and aft, not exceeding 150 tons.	Bridgewater, N.S.	do ..	5 00
	1889.					
1434	Jan. 18..	John O'Hara	Master, square rigged, not exceeding 150 tons.	Isaac's Harbour, N.S.	do ..	5 00
1435	Feb. 25..	Horatio Wm. Drake....	Mate, square rigged, not exceeding 150 tons.	Halifax, N.S....	do ..	3 00
1436	do 25..	Joseph Chute	Mate, square rigged.....	Harbourville, N.S.	do ..	3 00
1437	April 3..	Robert Bruce Anderson.	Master	Middle Melford, N.S.	do ..	5 00
1438	do 3..	William Burns	Mate, square rigged, not exceeding 150 tons.	Sandy Cove, N.S.	do ..	3 00
1439	do 10..	John Edward Lohnes...	Mate, fore and aft, not exceeding 150 tons, and master, coasting.	Middle La Have, N.S.	Lunenburg, N.S.	3 00
1440	do 24..	John B. Podester.....	Master, square rigged, not exceeding 150 tons.	St. Helen's, Isl'd of Jersey.	Halifax, N.S..	. ....
1441	May 6..	Richard H. Dooley	Mate, square rigged, not exceeding 150 tons.	Halifax, N.S....	do ..	3 00

List of Certificates of Competency granted to Masters and Mates of Inland and Coasting Vessels during the Twelve Months ended 30th November, 1889.

Number of Certificate.	Date of Certificate	Name.	Grade.	Address.	Where Examiation was Passed.	Fee.
	1889.					$ cts.
428	Dec. 26..	J. C. Symes	Master, steamer, inland.	Sarnia, Ont.	Toronto	8 00
429	do 26..	Donald A. Link	Master, steamer, Maganettawan River.	Gravenhurst, Ont.	do	8 00
430	do 26..	Francis A. Bassett	Mate, steamer, inland.	Collingwood, Ont.	do	4 00
431	do 26..	George Cook	Master, steamer, tug, inland.	Port Colborne, Ont	St. Catharines (re-examin'n.)	*
	1890.					
432	Jan. 11..	Charles Jacques	Master, steamer, inland.	Collingwood, Ont.	Toronto	8 00
433	do 11..	Archibald Bishop	Master, fore and aft, coasting.	St. John, N.B.	St. John, N.B.	8 00
434	do 11..	John Cameron	do do ..	do	do	8 00
435	do 11..	Charles V. Wilcox	do do ..	do	do	8 00
436	do 11..	Horatio W. Smith	Master, fore and aft, inland.	Kingston, Ont.	Kingston	8 00
427	do 15..	Andrew I. Monat	Mate, steamer, inland.	Toronto	Toronto (re-examin'n.)	*
438	do 23..	Francis P. Armstrong	Master, steamer, Upper Waters, Columbia River, B.C.	Golden, B.C.	Ottawa	8 00
439	do 28..	William Chapman	Master, freight steamer, Georgian Bay.	Wiarton, Ont.	St. Catharines, Ont.	8 00
440	do 28..	Wilson Garrett	Master, steamer, Lake Ontario and minor waters.	Smith's Falls, Ont.	Ottawa	8 00
441	do 28..	Herbert Cleland	Master, tug, Georgian Bay.	Collingwood, Ont.	St. Catharines, Ont.	8 00
442	do 28..	John W. Darling	Master, steamer, Georgian Bay.	do	do	8 00
443	do 28..	Guilford P. Pearsall	Master, steamer, inland.	do	Toronto	8 00
444	Jan. 28..	David A. Harrington	Master, fore and aft, coasting.	St. John, N.B.	St. John, N.B.	8 00
445	do 28..	David Reid	do do ..	do	do	8 00
446	do 28..	Thomas Johnson	Master, freight, steamer, Georgian Bay.	Midland, Ont.	St. Catharines, Ont.	8 00
447	do 28..	Robert McQuillan	Mate, freight, steamer, inland.	Harrison's Corners, Ont.	do	4 00
448	do 28..	Frederick McMann	Mate, fore and aft, sailing, inland.	Thorold, Ont	do	4 00
449	Feb. 25..	Magnus Benjaminsen	Master, fore and aft, coasting.	St. John, N.B.	St. John, N.B.	8 00
450	do 25..	Charles D. Wasson	do do ..	do	do	8 00
451	do 25..	John P. Lunn	do do ..	do	do	8 00
452	do 25..	David L. Dickson	do do ..	do	do	8 00
453	do 25..	John Hunter	do do ..	do	do	8 00
454	do 25..	James A. Christensen	Mate, steamer, coasting.	Victoria, B.C.	Victoria, re-examination.	*
455	do 27..	William J. Stitt	Mate, steamer, minor inland.	Cardinal, Ont.	Ottawa	4 00

* Re-examination fee paid before.

List of Certificates of Competency granted to Masters and Mates—*Continued.*

Number of Certificate.	Date of Certificate	Name.	Grade.	Address.	Where Examination was Passed.	Fee.
	1890.					$ cts.
456	Apr. 2..	Ernest Walton..... ...	Mate, steamer, inland.	Parry Sound, Ont.	Toronto ...	4 00
457	do 2..	John McCormick.....	Master, steamer, fore and aft, inland.	Pelee Island, Ont.	St. Catharines, Ont.	8 00
458	do 2..	Edwin L. Stephen	Mate, steamer, inland.	Collingwood, Ont..	Toronto	4 00
459	do 2..	Simon A. McCormick...	Mate, freight or tug, inland.	Pelee Island, Ont..	St. Catharines,	4 00
460	do 3..	W. H. Featherstone-haugh.	Master, tug, inland....	Penetanguishene, Ont.	Toronto	8 00
461	do 3..	Norman McLeod.....	Master, steamer, inland.	Owen Sound, Ont.	do	8 00
462	April 3..	Mathew Fox	Master, steamer, fore and aft, inland.	Port Hope, Ont...	Toronto	8 00
463	do 3..	Edward Martin	Master, steamer, inland	Collingwood, Ont.	St. Catharines, Ont.	8 00
464	do 3..	John T. McDonald.....	Master, freight steamer, inland.	St. Catharines, Ont.	do	8 00
465	do 3..	William C. Jordan	Mate, steamer, inland.	Toronto	Toronto	4 00
466	do 3..	Louis George Labatt....	Master, steamer, inland	Port Severn, Ont .	do	8 00
467	do 5..	John McLeod	Master, steamer and square rig, coasting, and mate foreign.	Victoria, B.C.....	Victoria, B.C.	8 00
468	do 5..	Thomas Johnson	Master, freight st'mr..	Midland, Ont.....	St. Catharines, Ont.	8 00
469	do 5..	Allan G. Clark.....	Master, steamer, between Ottawa and Montreal.	Ottawa, Ont.....	Ottawa.....	8 00
470	do 5..	James J. Flemming	Master, fore and aft, inland.	Kingston....	Kingston.....	8 00
471	do 5..	James Wallace	Mate, steamer, inland.	Hillsdale, Ont	Toronto	4 00
472	do 5..	John D. Harris.....	Mate, fore and aft, inland.	Garden Island, Ont	Kingston.....	4 00
473	do 5..	George Parlett	Master, steamer, Muskoka Lakes.	Gravenhurst, Ont.	Toronto	8 00
474	do 8..	Evangélisté Gauthier ...	Master, steamer, between Ottawa and Montreal.	Vaudreuil, Que ...	Ottawa.....	8 00
475	do 8..	James E. Butler.....	Master, steamer, square rig, coasting.	Victoria	Victoria....	8 00
476	do 8..	John Wray	Mate, steamer, inland.	Burlington, Ont ..	Toronto	4 00
477	do 10..	James Crosby.....	Mate, fore and aft, inland.	Garden Island, Ont	Kingston.	4 00
478	do 10..	William Machin.....	Master, steamer, tug, Georgean Bay.	Penetanguishene, Ont.	Toronto	8 00
479	do 10..	James Wilson.....	Master, steamer, inland	Collingwood, Ont..	do	8 00
480	do 10..	George Smith.....	Mate, fore and aft, inland.	Kincardine, Ont ..	St. Catharines, Ont.	4 00
481	do 12..	Joseph N. Chute.....	Master, fore and aft, coasting.	Harbourville, N.S.	Halifax, N.S..	8 00
482	do 12..	Albert E. DeLong.....	do do ..	St. John, N.B	St. John, N.B.	8 00
483	do 12..	Samuel S. Harris.....	do do ..	St. Martin's, N.B.	do ..	8 00
484	do 12..	Leonard Martin	do do ..	Alma, N.B.....	do ..	8 00
485	do 12..	Avery C. Anderson.....	do do ..	Waterside, N.B...	do ..	8 00

List of Certificates of Competency granted to Masters and Mates—*Continued.*

Number of Certificate.	Date of Certificate	Name.	Grade.	Address.	Where Examination was Passed.	Fee.
	1889.					$ cts.
486	April 12..	Peter Legault.....	Master, steamer between Montreal and Beauharnois.	Isle Perrot, Que ..	Ottawa.....	8 00
487	do 24..	John Jos. Fahey.....	Master, fore and aft, inland.	St. Catharines, Ont	St. Catharines, Ont.	8 00
488	do 24..	John Ferguson.....	do do ..	Garden Island.. ..	Kingston. ...	8 00
489	do 24..	John McKenzie..	Master, square rig, coasting.	Sydney, C.B.....	Sydney, C.B..	8 00
490	do 24..	Melbourne Erbb.....	Mate, steamer, minor, inland.	Springfield, N.B..	St. John, N.B.	4 00
491	do 24..	W. D. Graham	Master, fore and aft, inland.	St. Catharines, Ont	St. Catharines, Ont.	8 00
492	do 24..	Robert Cooney.....	Mate, steamer, inland.	Port Dalhousie, Ont.	do ..	4 00
493	do 24..	Peter McKinnon.....	Mate, fore and aft, inland.	Tiverton, Ont.....	do ..	4 00
494	do 24..	Alexander Milligan.....	Master, steamer, inland, fore and aft, sailing.	St. Catharines, Ont	St. Catharines.	8 00
495	do 24..	Robert Patterson.....	Mate, fore and aft, inland.	Kingston, Ont....	Kingston, Ont.	4 00
496	do 30..	John George Ainslie....	Master, tug, minor, inland, Tobermoray Harbour.	Tobermoray, Ont..	St. Catharines, Ont.	8 00
497	do 30..	Frederick George Hawx.	Master, fore and aft, coasting.	St. John, N. B....	St. John, N.B.	8 00
498	do 30..	John Ed. Williscroft ...	Mate, freight, steamer.	Saugeen, Ont.....	St. Catharines, Ont.	4 00
499	May 8..	William McLeod.....	Mate, fore and aft, sailing, inland.	Kincardine, Ont...	do ..	4 00
500	do 8..	Joseph Lefebvre.....	Master, steamer, between Cornwall and Montreal.	Coteau Landing, Que.	Ottawa.....	8 00
501	do 10..	Henry Lafave.....	Mate, steamer, St. Lawrence River and Bay of Quinté.	Garden Island, Ont	Kingston, Ont.	4 00
502	do 10..	Robert Henry Crosby...	Mate, fore and aft, sailing vessel, inland.	do .	do	4 00
503	do 10..	Peter M. Frederick.....	Mate, steamer, Bay of Quinté.	Belleville, Ont....	do	4 00
504	do 22..	LeBaron Estabrooks....	Master, steamer, St. John River.	Upper Gagetown, N. B.	St. John, N.B.	8 00
505	do 22..	Frederick J. Swan	Mate, steamer, Toronto Bay.	Toronto, Ont.....	St. Catharines, Ont.	4 00
506	do 22..	Kenneth Morrison.....	Master, steamer, tug, Muskoka Lakes.	Gravenhurst, Ont.	do	8 00
507	do 22..	William Fraser.....	Master, steamer, tug, Georgian Bay.	Welland, Out.....	do	8 00
508	do 22..	Duncan McLeod.....	Mate, fore and aft, inland.	Sarnia, Ont.....	St. Catharines, Ont.	4 00
509	do 22..	Julien Martin.....	Master, steamer, minor, inland.	Valleyfield, Que .	Ottawa, Ont..	8 00
510	June 3..	Adelard Boyer	Mate, steamer, St. Lawrence, above Montreal.	Coteau Landing, Que.	do ..	4 00
511	do 3..	Arthur Terry.....	Mate, steamer, inland.	Bowmanville, Ont.	St. Catharines, Ont.	4 00
512	do 4..	Arthur J. Metge.....	Master, steamer, inland	Corruna, Ont.....	do ..	8 00
514	do 4..	Albert H. Forrest... ...	Master, minor, Lake St. Clair and Detroit River.	Walkerville, Ont..	do ..	8 00

List of Certificates of Competency granted to Masters and Mates, &c.—*Con.*

Number of Certificate.	Date of Certificate	Name.	Grade.	Address.	Where Examination was Passed.	Fee.
	1889.					$ cts.
515	June 7..	Frederick A. Jarvis.....	Master, steamer and sailing vessel, inland and mate, sea-going, not exceeding 150 tns.	Ottawa, Ont....	Ottawa, Ont..	8 00
516	do 12..	Joseph A. Larochelle...	Mate, steamer, Ottawa, above Mattawa.	Mattawa, Ont	do ..	4 00
517	do 12..	Harry Gibson	Mate, steamer and fore and aft, inland.	Toronto, Ont.....	St. Catharines, Ont.	4 00
518	do 12..	Wm. John McMillan....	Mate, steamer, Niagara River and vicinity.	Niagara, Ont.....	do ..	4 00
519	July 8..	Wm. Livingstone.....	Master, steamer, limited to Toronto Bay.	Toronto, Ont.....	do ..	8 00
520	do 8..	Samuel Duprey.....	Master, fore and aft, inland.	Windsor, Ont.....	do ..	8 00
521	do 8..	William J. Douglas.....	Mate, fore and aft, inland.	Port Hope, Ont...	St. Catharines.	4 00
522	do 8..	John A. Caselman	Master, steam tug, inland.	Collingwood, Ont..	do ..	8 00
523	do 8..	A. W. Hepburn	Master, Lake Ontario and River St. Lawrence to Montreal.	Deseronto, Ont....	do ..	8 00
524	do 9..	Cornelius H. Ryder.....	Master, fore and aft, coasting.	Lower Granville, N.S.	St. John.....	8 00
525	do 9..	Patrick James.....	do do ..	St. John, N.B....	do	8 00
526	do 8..	James McQuarrie	Mate, fore and aft, inland.	St. Catharines, Ont	St. Catharines.	4 00
527	do 8..	John Boudge.....	do do ..	do do ..	do ..	4 00
528	do 22..	Frederick Elliott	Master, steam'r, inland	Prescott, Ont.	do ..	8 00
529	do 22..	George Irwin.....	Master, st'm tug, Welland Canal Harbours, Hamilton, Toronto and Buffalo.	Port Dalhousie, Ont.	do ..	8 00
530	do 26..	Edward Harris.....	Master, steam tug, inland.	do do ..	do ..	8 00
531	Aug. 5..	Ozias Barrett	Master, freight, st'mer.	Port Rowan, Ont..	do ..	8 00
532	do 5..	James Martin	Master, steamer, inla'd, and fore and aft, sailing.	Oakville, Ont.	do ..	8 00
533	do 5..	Harry L. Pykarick	Master, fore and aft, coasting.	Pictou, N.S.....	St. John.....	8 00
534	do ..	Oscar Mathews.....	Master, steamer, minor, inland.	Hamilton, Ont....	St. Catharines, Ont.	8 00
535	do 29..	John J. Pearson.....	Master, freight steamer	Owen Sound, Ont.	do ..	8 00
536	do 29..	Wm. Glassbrok	Mate, steam ferry boat, Niagara River, below falls.	Niagara Falls, Ont	do ..	4 00
537	Sept. 11..	Benjamin Ham.....	Master, square rigged, coasting.	Mahone Bay, N.S.	Lunenburg, N.S.	8 00
538	do 11..	Avard Mader.....	Mate, square rigged, coasting.	do ..	do ..	4 00
539	do 11..	Wm. McClory.....	Mate, fore and aft, inland.	St. Catharines, Ont	St. Catharines, Ont.	
540	do 17..	Geo. R. Wood.....	do do ..	Port Dalhousie, Ont	do ..	4 00
541	do 17..	Geo. Hamilton.....	Mate, square rigged, coasting.	Hopewell, N.B....	St. John, N.B.	4 00
542	do 17..	Simon Ernst.....	Master, fore and aft, coasting.	Port Lorne, N.S ..	do ..	8 00

LIST of Certificates of Competency granted to Masters and Mates—*Continued.*

Number of Certificate.	Date of Certificate	Name.	Grade.	Address.	Where Examination was Passed.	Fee. $ cts.
	1889.					
543	Sept. 17..	Jos. E. de Julien.....	Master, Ottawa River, above Ottawa.	Portage du Fort ..	Ottawa.....	8 00
544	do 17..	James H. Pross	Master, fore and aft...	Owen Sonnd, Ont.	St. Catharines, Ont.	8 00
545	do 17..	James Andrew.....	Master, steamer, inland, fore and aft...	do ..	do ..	8 00
546	Oct. 22..	Francis A. Bassett.....	Master, steamer, inland.	Collingwood, Ont..	do ..	8 00
547	do 22..	Wm. Bloomfield.....	Master, steamer, minor	Kingston, Ont....	Kingston, Ont.	8 00
548	do 23..	Samuel Milligan.....	Mate, fore and aft, sailing, inland.	do	St. Catharines, Ont.	4 00
549	do 30..	Timothy Toupin.....	Master, steamer, inland.	Montreal.....	do ..	8 00
550	do 30..	Joseph Simard.....	Mate, fore and aft, inland.	Bay St. Paul, Que.	Kingston, Ont.	4 00
551	do 30..	Frank Matthews.....	do do ..	Lakeport, Ont....	do ..	4 00
552	Nov. 11..	Jeremiah Donovan.....	Master, fore and aft, coasting.	St. John, N.B	St. John, N.B.	8 00
553	do 11..	Samuel Herman.....	Mate, fore and aft, coasting.	Herman's Island, Lunenburg, N.S.	Lunenburg, N.S.	4 00
554	do 11..	Stephen H. Frost.....	Master, fore and aft, coasting.	St. John, N.B....	St. John, N.B.	8 00
555	do 11..	John Givens.....	Mate, steamer, inland.	Kingston, Ont....	Kingston, Ont.	4 00
556	Dec. 2..	Sydney W. Donkin.....	Master, fore and aft, coasting.	Sackville, N.B....	St. John, N.B.	8 00
557	do 6..	Isaac Northrup.....	Master, steamer, St. John River.	Johnson, N.B.....	do ..	8 00
558	do 6..	Alex. McIntyre.....	Master, tug, Georgina Bay.	Collingwood, Ont..	St. Catharines, Ont.	8 00
559	do 6..	John F. Kennealy.....	Master, fore and aft, coasting.	Harbourville, N.S.	St. John, N.B.	8 00

List of Certificates of Service granted to Masters and Mates of Inland and Coasting Vessels, during the Twelve Months ended 30th November, 1889.

Number of Certificate.	Date of Certificate	Name.	Grade.	Address.	Where Examination was Passed.	Fee.
	1889.					$ cts.
2657	Dec. 26..	William Dulmage.....	Mate, fore and aft, inland.	Point Travers, Ont.	Kingston, Ont.	2 00
	1890.					
2658	Jan. 11..	Jacob Wilson.	Master, fore and aft, coasting.	Portland, N.B ...	St. John, N.B.	4 00
2659	do 11..	Robert McDonald	do do	Westport, N.S....	Parrsboro', N.S.	4 00
2660	do 28..	Joseph Harris	do do	Kentville, N.S. ...	Kentville.....	4 00
2661	do 28..	David C. Hunter.....	do do	Walton, N.S.....	do	4 00
2662	do 28..	Samuel Corson	Master, steam tug, Georgian Bay.	Collingwood, Ont .	St. Catharines, Ont.	4 00
2663	do 28..	C. E. York	Master, fore and aft, coasting.	Parrsboro', N.S...	Parrsboro'	4 00
2664	do 28..	Dennis Dacey	Mate, fore and aft, sailing, inland.	St. Catharines	St. Catharines.	2 00
2665	Feb. 27..	John Bernard	Mate, steam tug, limited, Detroit and St. Clair Rivers.	Amherstburg, Ont.	do ..	2 00
2666	do 27..	William O'Hagan.....	Mate, fore and aft, sailing, inland.	Picton, Ont.....	Picton..... .	2 00
2667	do 27..	James McKnight.	Master, fore and aft, sailing, inland.	Oakville, Ont.....	Toronto	4 00
2668	April 3..	George Braithwaite....	Master, steamer, Rice Lake.	Cobourg, Ont.....	Ottawa.....	4 00
2669	do 3..	Fredk. L. Parker.....	Mate, square rig, coasting.	Walton, N.S.....	Halifax.....	2 00
2670	do 5..	Moses Pitipas	Master, fore and aft, coasting.	Tracadie, N.S....	do	4 00
2671	do 5..	Albert Hamilton.....	Mate, square rig, coasting.	Summerville, N.S.	do	2 00
2672	do 5..	Herbert Saunders.....	Master, fore and aft, coasting.	Saundy Cove, N.S.	do	4 00
2673	do 5..	Hugh Chisholm.....	Master, steamer, inland	Town of Meaford, Ont.	Toronto	4 00
2674	do 8..	John S. Finlayson.....	Mate, fore and aft, inland.	Muskoka Mills, Ont.	do	2 00
2675	do 8..	John Daley	do do	Kingston, Ont....	Kingston.....	2 00
2676	do 8..	Robert S. Elliot.....	Master, fore and aft, coasting.	Central Economy, N.S.	Halifax.....	4 00
2677	do 8..	Richard Beecraft	Mate, fore and aft, steamer, inland.	Penetanguishene..	Toronto	2 00
2678	do 10.	Samuel Scott.	Master, steamers, Ottawa and Rideau Rivers and Canals.	Newboro, Leeds, Ont.	Kingston.....	4 00
2679	do 10..	George Stewart.....	Master, steam tug, minor inland.	Midland, Ont.....	Toronto	4 00
2680	do 12..	H. M. Hatfield.....	Master, fore and aft, coasting.	St. John, N.B....	St. John.....	4 00
2681	do 12..	C. H. Glaspy.....	do do	do ...	do	4 00
2682	do 12..	John B. McNeil.....	do do	do	do	4 00
2683	do 12..	Edward J. Robinson....	Mate, fore and aft, coasting.	Yarmouth, N.S...	Yarmouth....	2 00
2684	do 15..	Neil McAullay....	Master, fore and aft, coasting.	Catalone, Cape Breton, N.S.	Halifax.....	4 00
2685	do 18..	George W. Maitland ...	Mate, fore and aft	Village of Brighton Ont.	Ottawa.....	2 00

LIST of Certificates of Service granted to Masters and Mates, &c.—*Continued.*

Number of Certificate.	Date of Certificate	Name.	Grade.	Address.	Where Examination was Passed.	Fee.
	1889.					$ cts.
2686	April 24..	Owen Gallagher	Mate, fore and aft, inland.	St. Catharines, Ont	St. Catharines	2 00
2687	do 24..	John Howe	do do	Port Dalhousie, Ont.	do ..	2 00
2688	do 24..	Wm. G. Glaspy	Master, fore and aft, inland.	St. John, N.B.	St. John	4 00
2689	do 30..	Neil Montgomery	Mate, fore and aft, inland.	Kincardine, Ont ..	Kingston	2 00
2690	May 8..	Frank Gendron	Master, fore and aft, sailing and tug, inland	Collingwood. Ont..	St. Catharines	4 00
2691	do 8..	A. T. Murcheson	Master, steamer, minor inland.	New Westminster, B.C.	Victoria, B.C.	4 00
2692	do 9..	W. J. Strong	Master, steam barge or tug, east side Lake Huron.	Port Elgin, Ont...	St. Catharines	4 00
2693	do 9..	Wm. Menten	Master, steam tug, inland.	Hepworth, Ont...	do ..	4 00
2694	do 9..	John Baker	Master, steam barge, Lakes Erie & Huron	Windsor, Ont	do ..	4 00
2695	do 9..	Neil Stewart	Master, fore and aft, coasting.	Hourchie, C.B....	Halifax	4 00
2696	do 9..	John Dingwell	Mate, fore and aft, inland.	Sarnia, Ont	Toronto	2 00
2697	do 16..	Thomas Norton	Master, tug, minor, Lake Memphremagog P.Q.	Newport, Vt., U.S.	Ottawa	4 00
2698	do 22..	John Westlake	Mate, fore and aft, inland.	Township of Stanley, Co. Huron, Ont.	St. Catharines	2 00
2699	do 22..	H. A. Parker	Mate, fore and aft, coasting.	Hall's Harbour, N.S.	Halifax	2 00
2700	do 22..	W. H. Lyons	Master, fore and aft, coasting.	Barrington, N.S..	Barrington	
2701	do 22..	Robert W. Abbey	Master, steam tug, inland.	Port Dalhousie....	St. Catharines	4 00
2702	do 22..	Alfred Sullivan	Master, fore and aft, coasting, and master, square rig, freight, 150 tons.	Meteghan, N.S...	Yarmouth	4 00
2703	June 3..	Thomas F. McCullough	Master, steamer, Lake Simcoe.	Beaverton, Ont...	St. Catharines, Ont.	4 00
2704	do 3..	Alex. Pollock	Master, steamer, inland	Toronto	do	4 00
2705	do 3..	John Sam. Holder	Mate, fore and aft, coasting.	St. John, N.B....	St. John, N.B.	2 00
2706	do 4..	Jonathan Neff	Master, steam tug or ferry boat, Welland Canal and foot Lake Erie.	Humberstone, Ont	St. Catharines, Ont.	4 00
2707	do 12..	C W. Calcutt	Master, steamer, Rice Lake and Otonabee River.	Peterborough, Ont	do	4 00
2708	do 12..	Ferdinand Moreau	Master, steam tug, Georgian Bay.	Port Severn, Ont..	do	4 00
2709	July 9..	Donald McDonald	Master, steam tug, North Channel Georgian Bay.	Port Elgin, Ont...	do	4 00
2710	do 9..	John George	Mate, fore and aft, coasting.	Parrsboro, N.S....	Halifax, N.S..	2 00
2711	do 22..	John Quirt	Mate, fore and aft, sailing, inland.	Kingston, Ont.. .	Kingston, Ont	2 00

LIST of Certificates of Service granted to Masters and Mates, &c.—*Continued.*

Number of Certificate.	Date of Certificate	Name.	Grade.	Address.	Where Examination was Passed.	Fee.
	1889.					$ cts.
2712	July 22..	Thomas Ceasor.....	Master, waters o Peterborough, minor, inland.	Lindsay, Ont.....	St. Catherines, Ont.	4 00
2713	do 31..	C. F. Calcutt.....	Master, steamer, Otonabee River, Rice Lake and tributaries.	Peterborough, Ont	do	4 00
2714	Aug. 8..	Stephen W. Rawding...	Master, square rig, coasting.	Canada Creek, NS.	Halifax, N.S..	.....
2715	do 8..	Charles E. Eaton.....	do do	do	do	.....
2716	do 29..	Patrick McKernan.....	Mate, fore and aft and steamer, inland.	Trenton, Ont.....	Kingston, Ont	2 00
2717	do 29..	Claud Elliot.....	Master, tug, east shore Lake Huron.	Saugeen, Ont.....	St. Catharines, Ont.	4 00
2718	do 29..	Thomas Short.....	Master, steamer, St. Lawrence & Ottawa rivers and Bay of Quinté.	Hawkesbury, Ont.	Kingston, Ont	4 00
2719	do 29..	Wm. H. Jenking.....	Master, steamer, Detroit River.	Walkerville, Ont.	St. Catharines, Ont.	4 00
2720	do 29..	John McRae.....	Master, tug, Georgian Bay.	Meaford, Ont.....	do	4 00
2721	do 29..	John Curphey.....	Master, fore and aft, inland.	Shelburne, Ont...	do	4 00
2722	do 29..	John McRae.....	Master, steamer, yacht, Lake Simcoe.	Beaverton, Ont...	Ottawa, Ont..	4 00
2723	do 29..	Robert Hewitt.....	Master, fore and aft, coasting.	Port Hillford, NS.	Halifax, N.S..	4 00
2724	Sept. 13..	Michel Degroseiller.....	Master, steamer, inland	St. Louis, Beauharnois, P.Q.	Kingston, Ont	4 00
2725	do 13..	John Hodgson.....	Master, steamer, minor, inland, Ottawa and Rideau rivers, Lake Huron.	Red Bay, Bruce Co	St. Catharines, Ont.	4 00
2726	do 13..	Edward Brooks.....	Master, steam tug, east shore Lake Huron.	St. Catharines....	do	4 00
2727	do 13..	John K. Thorne.....	Mate, fore and aft, coasting.	Lower Granville, N.S.	Halifax, N.S..	2 00
2728	do 17..	Richard Chapman	Master, tug, Georgian Bay.	St. Catharines....	St. Catharines, Ont.	4 00
2729	do 17..	Richard H. Baker	Master, steamer, inland	New Westminster, B.C.	Victoria, B.C.	4 00
2730	do 17..	F. Burnash.....	Master, steam tug, Ottawa & Rideau rivers.	Brewer's Mills, Frontenac, Ont.	Kingston, Ont	4 00
2731	do 17..	R. J. Muchmore.....	do do	Jones' Falls, Ont..	do	4 00
2732	do 17..	J. I. Impett.....	Mate, steamer, inland.	Chatham, Ont....	St. Catharines, Ont.	2 00
2733	Oct. 18..	Burton E. Yorke	Master, fore and aft, coasting.	Parrsboro, N.S. ..	Parrsboro, N.S	4 00
2734	do 18..	Robert Hy. Marsters ...	Mate, square rig, coasting.	Somerville, N.S...	Halifax, N.S..	2 00
2735	do 18..	Joseph Dillon	Master, fore and aft, coasting, and mate, foreign.	Parrsboro, N.S....	Parrsboro, N.S	4 00
2736	do 18..	Marcel Chabot.....	Master, steam'r, minor, inland.	St. Emilié, P.Q...	Quebec.....	4 00
2737	do 22..	J. Pilgrim.....	Master, steam tug, Georgian Bay.	Meaford, Ont.....	St. Catharines, Ont.	4 00
2738	do 22..	Peter McIntosh.....	Master, steam tug, Byng Inlet and French River.	French River, Parry Sound, Ont	do	4 00

LIST of Certificates of Service granted to Masters and Mates, &c.—*Continued.*

Number of Certificate.	Date of Certificate	Name.	Grade.	Address.	Where Examination was Passed.	Fee.
	1890.					$ cts.
2739	Oct. 22..	Hugh McWhinay.....	Mate, fore and aft, inland.	Kingston, Ont....	Kingston, Ont	2 00
2740	do 22..	David L. Amiro.....	Master, coasting.....	West Pubnico, NS	Yarmouth N.S	4 00
2741	do 23..	Joseph Charlebois	Master, steam tug.....	French River, Ont	St. Catharines, Ont.	4 00
2742	do 23..	William Bertrand.....	Master, steam'r, minor, inland.	St. Antoine, P.Q..	Quebec.....	4 00
2743	do 23..	Edward Doran	do do	Point Levis, P.Q..	do	4 00
2744	do 23..	O. Delisle.....	do do	Grondine, P.Q....	do	4 00
2745	do 23..	Louis Roberge.....	do do	St. David de Lanberiviere, P.Q.	do	4 00
2746	do 23..	Xavier Dufour	Master, fore and aft, minor, inland.	Chicoutimi, P.Q ..	do	4 00
2747	do 23..	George E. Corbitt	Master, stermer, Annapolis River and Basin.	Digby, N.S.....	Yarmouth N.S	4 00
2748	do 23..	Frank Robinson.....	Mate, steamer, Annapolis River and Basin.	Annapolis, N.S...	do	2 00
2749	do 30..	Louis LeBlanc.....	Master, fore and aft, coasting.	Port Acadia, N.S.	Halifax, N.S..	4 00
2750	do 30..	James H. McLean.....	Master, steamer, inland (freight steamer), limited to St. Clair, Sydenham & Detroit rivers and Lake St. Clair.	Wallaceburg, Ont.	St. Catharines,	4 00
2751	do 30..	Wm. Seaman.....	Master, steam tug, limited to Lake Huron and Georgian Bay.	Collingwood, Ont.	do	4 00
2752	Nov. 11..	Alfred Ellis	Master, fore and aft, coasting.	Halifax, N.S.....	Halifax, N.S..	4 00
2753	Dec. 6..	John. J. Myers.	do do	Guysboro, N.S....	do	4 00
2754	do 6..	Adam Hinton.....	Mate, fore and aft, inland.	Brontee, Halton, Ont.	Toronto	2 00
2755	do 6..	Thomas O'Brien.....	do do	Toronto, Ont	St. Catharines, Ont.	2 00
2756	Oct. 30..	Randolph Telford.....	Mate, square rig, coasting.	Bear River, Yarmouth, N.S.	Yarmouth N.S	2 00

List of Certificates of Competency and Service which have been cancelled during the Year 1889.

No. of Certificate.	Name.	Grade.	Cause of Cancellation.	Date of Cancellation or Suspension.
				1889.
2289	W. W. Hopkins	Mate, competency	Passed for higher grade	3rd January.
2425	G. E. Purdy	do do	do	3rd do
2274	Ernest Kinney	2nd Mate do	do	3rd do
2462	Silas M. Marsters	Mate do	do	10th do
2401	William McBride	do do	do	15th do
1611	Eugene S. Bogart	Master	Deceased	31st do
2073	Frank L. Perry	do	do	31st do
2139	François X. Pouliot	Mate, competency	Passed for higher grade	6th February.
2472	William H. Norcott	do	do	15th do
2142	Louis LeBourdais	Master	Cancelled, on the 21st January, 1889, by the Board of Trade, London, because of his conviction at Glasgow for attempting to scuttle the "Gylfe," and sentenced to a year's penal servitude.	27th do
2433	John. J. Campbell	2nd Mate, compt'cy	Passed for higher grade	20th do
2264	James McN. Dermier	Mate	do in London, Eng.	20th do
2295	R. M. Saunders	do	do do	20th do
2421	William L. Smith	do	do do	20th do
2171	Hector McKinnon	do	do do	20th do
62	Robert Nutter	Master	Suspended by Court of Inquiry, at Halifax, for six months, from Jan. 23rd., 1889, for leaving a seaman of the "Merime G. Elkin," at Philadelphia, in hospital, without paying his wages or expenses.	20th do
1511	John McLeod	Mate, competency	Passed for Master, coasting	6th do
2374	Robert Salisbury	do do	Passed for higher grade	30th March.
2511	Charles D. Bowers	2nd Mate do	do	30th do
1707	David Waters	Mate	do	30th do
126	Thomas Blagdon	Master, service	do	30th do
1436	Joseph Chute	Mate do	do	—— April.
475	François Dumas	Master	Died at Sourabaya, while Master of the British bark "Polynesian," on the 24th February, 1889.	—— do
2407	David Foote	Mate, competency	Passed for higher grade	1st May.
2427	George Strupart	do	do	1st do
2327	George C. Hawes	do	do	1st do
2410	John Thomas Rice	do	do	1st do
2519	Samuel G. Cox	do	do	1st do
2233	Michael Brickley	do	do	21st do
1423	Frederick A. Jarvis	Mate, service	Passed for Captain, inland	6th June.
2520	Chas. J. Vicars	do	Passed for higher grade	4th do
2331	Edgar Godfrey	Mate, competency	do	20th do
2426	John E. Curtis	2nd Mate do	do	27th do
2337	John E. G. Letson	do do	do	27th do
2432	Patrick E. McMurray	do do	do	27th do
2359	William McVicar	Mate do	do	27th do
2499	Everett E. Thompson	do do	do	27th do
2393	Charles McDonald	do do	do	4th July.
2329	Oscar Smith	do do	do	4th do
1831	James W. Anderson	do do	do	4th do
2538	Henry C. M. Almon	do	do	17th do
2435	Jessie E. Anderson	do	do	17th do
2424	A. W. Wyman	do	do	20th do
2371	N. S. Purdy	do	do	20th do
2477	Lindsay R. Perry	do	do	20th do
1698	Thomas S. Lawrence	do	do	5th do
2483	John A. Liswell	do	do	2nd August.

List of Certificates of Competency which have been cancelled—*Concluded.*

No. of Certificate.	Name.	Grade.	Cause of Cancellation.	Date of Cancellation or Suspension.
				1889.
2443	Charles Ed. Ross	Mate, competency	Passed for higher grade	20th August.
2548	George C. Macdonald	do	do	19th Sept.
2346	William H. Gerard	do	do	19th do
2530	Angus C. Campbell	do	do	19th do
2487	Benjamin Terfry	do	do	19th do
2261	Melville F. Cutler	do	do	19th do
2554	John M. Hensley	do	do	26th do
2092	William W. Mundy	do	do	26th do
2441	Charles J. Moses	do	do	26th do
2562	Loren C. Caddell	do	do	4th October.
910	Joseph Dillon	Mate, service	Passed for master, steamer, coasting	9th do
2527	Alexander Cox	do competency	Suspended by a Marine Court of Enquiry at Hong Kong, for cruelty to one of the crew of his vessel. Suspension for two years, from the 11th Sept., 1889	
2436	Stuart G. Fulton	do	Passed for higher grade	28th do
2461	Edmund E. Manning	do	do	30th do
2312	Farnum H. Patten	do	do	30th do
2416	Frank B. Baker	2nd Mate, compt'y	do	30th do
2408	John W. McKenzie	Mate, competency	do	14th Nov.
2375	William M. Cronan	do	do	14th do
2518	A. M. Anderson	do	do	28th do
2377	Andrew Geo. Kitchen	do	do in Australia	28th do
1045	Alexander Chisholm	Master	Suspended for acts of misconduct for the period of six months, from 18th October, 1889	
2298	Abraham Nelson	do	Died at sea, on a voyage from Demarrara to New York, of heart disease	18th December
2247	William Davis	Mate, competency	Passed for higher grade	13th do
2394	Nelson A. Withers		do	13th do
2546	William Henry Coonan	2nd Mate	do	13th do

APPENDIX No. 27.

REPORT OF THE PORT WARDEN FOR THE PORT OF MONTREAL FOR THE CALENDAR YEAR ENDED 31ST DECEMBER, 1889.

OFFICE BOARD OF TRADE,
MONTREAL, 7th January, 1890.

SIR,—I have the honour, by direction of the Council of this Board, and in compliance with Sec. 31 of the Act governing the Port Warden's Office, 45 Vic., Chap. 45, to transmit herewith documents as follows:—

1. The Port Warden's Report for the year 1889.
2. Audited statement of Receipts and Expenditure of the Port Warden's Office for the year ended 31st December, 1889.
3. Statement of Investments of the Port Warden's Surplus Funds.

I have the honour to be, Sir,

Your obedient servant,

GEORGE HADRILL,

Secretary.

HON. CHAS. H. TUPPER,
Minister of Marine and Fisheries,
Ottawa.

OFFICE OF THE PORT WARDEN,
MONTREAL, 31st December, 1889.

To the President and Council of the Board of Trade, Montreal:

GENTLEMEN,—I have the honor to submit the annual report, with statements of the receipts and expenditures of this office for the year 1889.

The season of ocean navigation was opened on the 27th April by the arrival of the steamship "Lake Nepigon," from Liverpool, followed by other steamers of the different lines, and on the 23rd May the first sailing vessel, the barque "Lima," from Barbadoes, entered port.

The steamship "Montreal" was the first vessel to enter by the Strait of Belle Isle, which she did on the 16th June, and met the steamship "Oregon" passing outwards on that day.

It is noticeable that there was no detention nor damage by ice to the spring fleet in the Gulf of St. Lawrence this season.

The steamship "Electrique," of the Bossières Line, was the last vessel to leave port for sea, sailing on the 23rd November. She arrived safely at Quebec, completed her loading there and proceeded to sea without detention by ice. In consequence of the deepening of the channel no cargo has been lightered to Quebec, although the water has been unusually low in the river this season, and on the 7th August the steamship "Vancouver," of the Dominion Line, passed through drawing twenty-seven feet two inches (27 ft. 2 in.), the deepest draught to this date.

Three hundred and sixty-two (362) steam and sailing vessels, of a total of 614,004 tons, were entered at this office, being fifty-four (54) steam and nineteen (19) sailing vessels of 89,824 tons over the tonnage of last year, beside those vessels engaged in the coal trade which are not entered in our books.

It is satisfactory to notice that there has been a marked increase in quantity of almost all the articles of export over last year; 9,959,286 bushels of various grain being shipped this season and 5,690,873 last season. Of this quantity 6,672,426 bushels were corn, while in 1888 there were but 2,774,055 bushels. The balance is made up of other grain, with the exception of barley, of which there was no shipment.

In deals and lumber the increase is very large. In 1888 there were 103,041,005 feet of deals shipped to Great Britain and 14,288,716 feet of lumber to South America, and this last season 131,268,955 feet of deals to Great Britain and 23,020,663 feet of lumber to South America, an increase of almost 37,000,000 feet, or 14,257 St. Petersburg standard deals.

Of cattle, there has been the large shipment of 24,483 head, and of sheep 12,927 over and above last year, the numbers exported being 85,659 cattle and horses and 58,683 sheep this season.

No complaints have been made against the efficiency or proper working of the office, all the members of the staff having ably assisted in carrying on its duties, and it is again gratifying to state that no vessel of our large fleet has been lost or disabled through overloading or unseaworthiness.

Although there was a considerable reduction made, by order of your Board, in the fees, many articles being placed on the free list, on account of the large exportation the amount collected has been adequate to meet the current expenses, which are about the same as in former years.

The citizens have at last arisen from their apathy concerning the requirements of the harbour and are beginning to see its value as the great shipping port of the Dominion, and the principal cause of the increasing prosperity of this large manufacturing city. Any projected improvements must, however, be closely considered with regard to the centralizing of the shipping trade so as to avoid the long distance cartage of goods to and from the centres of business. It would be well in this connection to look to the large space of wharfage now only partially used, and extending on the west side of the canal from St. Gabriel Locks to the entrance or first lock in the harbour. Were a new entrance lock built of sufficient size and depth, the canal and basins deepened and altered, an amount of valuable space now lying almost idle could be made available for shipping.

I am, gentlemen,

Yours respectfully,

JAS. G. SHAW,

Port Warden.

STATEMENT of the Investments of the Surplus Funds of the Port Warden's Office at Montreal, and of Interest Accruing therefrom, during the Year ended 31st December, 1889.

Date.	——	Amount.	$ cts.
May 4, 1870..	*Expended $2,014.78 in purchase of Protestant School Commissioners' Bonds, Nos. 00001 and 00002, $1,000 each.....	$2,000, at 6 p.c., for 6 mos..	60 00
April 21, 1871..	*Expended $3,135.84 in purchase of City of Montreal Corporation Bonds, No 18, £500; No. 62, £250—£750..	$3,000, at do do ..	90 00
Jan. 12, 1877..	Expended $2,044 in purchase of City of Montreal Corporation Bonds, Nos. 00423, 00424, 00425, 00426—4, at $500	$2,000, at 6 p.c., for 12 mos.	120 00
Feb. 16, 1880..	Expended $2,380.34 in purchase of Dominion Government Stock.....	$2,300, at 4 do do ..	92 00
do 16, 1880..	Expended $7,254.11 in purchase of City of Montreal Registered Stock	$7,000, at 5 do do ..	350 00
April 18, 1884..	Expended $5,031.34 in purchase of City of Montreal four per cent. Registered Stock, Nos. 1720, 1721, 1722, 1723, 1724—5, at $1,000	$5,600, at 4 do do ..	200 00
Mar. 14, 1887..	Expended $10,320.75 in purchase of City of Montreal Consolidated Fund Stock, Class C—100 Shares of $100 each	$10,000, at 4 do do ..	400 00
Nov. 2, 1888..	Deposited in the Merchants Bank of Canada $5,000 on Deposit Receipt No. 13805, at four per cent.....	$5,000, at 4 p.c., from Nov. 2, '88, to Jan. 4, '90.	234 50
June 25, 1889..	Deposited in the Merchants Bank of Canada $10,000 on Deposit Receipt No. 13854, at four per cent.....	$10,000, at 4 p.c, from June 25, '89, to Jan. 4, '90..	211 52
	Total of Surplus Fund	$41,300. Interest, year 1889.	1,758 02

* The above Bonds have matured—the Protestant School Commissioners' on 1st June, 1889; the Corporation Bonds on 1st May, 1889.

EDGAR JUDGE,
Treasurer.
GEO. HADRILL,
Secretary.

MONTREAL, 7th January, 1890.

PORT WARDEN'S OFFICE.

DR. STATEMENT of Receipts and Expenditure for Year ending 31st December, 1889. CR.

Date.	——	$ cts.	$ cts.	——	$ cts.	$ cts.
1888.						
Dec. 31....	To Balance Cash in Bank	6,689 99		By Paid salaries, &c.—		
do 31....	do in Port Warden's hands	141 83	6,831 82	Jas. G. Shaw, Port Warden	2,000 00	
1889.				Geo. W. Morrison, Deputy Port Warden	1,500 00	
Dec. 31....	To Receipts derived as under—			W. J. Anderson, book-keeper	1,200 00	
	2,182,516 bushels wheat			E. J. Hunt, clerk	280 00	
	1,015,410 do pease			A. Millar, boy	66 00	
	6,672,426 do corn			Board of Trade, secretarial expenses	1,000 00	
	69,214 do rye			Port Warden's superannuation allowance—		
	19,720 do oats			Jas. G. Shaw, Port Warden	300 00	
	2,005 tons oil cake			Geo. W. Morrison, Deputy Port Warden	200 00	
	1,802 do minerals			Rent, fuel, taxes, light, insurance, &c.	478 36	
	661,538 brls. flour and meal	496 16		Maritime register, Lloyd's registers, &c.	86 55	
	2,533 do ashes	25 33		Books, printing and stationery	65 80	
	160,680 do apples	401 83		Cab hire	140 85	
	85,659 oxen and horses	856 59		Miscellaneous expenses	17 55	
	58,683 sheep and hogs	146 75		Loss through failure	2 22	
	154,289,618 feet sawn lumber	771 44		Alf. W. Hadrill, auditor	60 00	
	44 M. West India staves	3 52				7,397 33
	77,355 tons sundries, at 3c.	2,320 66		Treasurer, Board of Trade, Special Deposit in Merchants Bank of Canada, Deposit Receipt No. 13854		10,000 00
	1,664 do do 2c.	33 28		Balance		5,148 98
	23,848 tons phosphates	238 48				
	Port Warden's fees (inwards)	226 50				
	do (outwards)	1,338 50				
	Special surveys	232 00				
	Damaged cargo certificates	194 75				
	Interest on deposit in Montreal City and District Savings Bank	167 87	7,285 78			
	Cash from Treasurer, Board of Trade for Bonds matured, $5,000 and certain accumulations of interest, &c., $1,502.82	6,502 82				
	Interest on investments for 1889	1,758 02				
			8,428 71			
1890.			22,546 31			22,546 00
Jan. 1....	Balance	5,148 98				

Audited and found correct,

MONTREAL, 4th January, 1890.

E. & O. E.

JAS. G. SHAW, *Port Warden.*
ALF. W. HADRILL, *Auditor.*

APPENDIX No. 28.

REPORT OF THE PORT WARDEN FOR THE PORT OF QUEBEC FOR THE CALENDAR YEAR ENDED 31ST DECEMBER, 1889.

PORT WARDEN'S OFFICE, 40 DALHOUSIE STREET,
QUEBEC, 31st December, 1889.

SIR,—I have the honour to submit this my annual report of the affairs of this office during the year ending the 31st December, 1889.

The following enumerated class of vessels, viz., steamers and sailing vessels, have been examined and surveyed in this harbour and in the port of Quebec, and in compliance with the Acts relating to Port Wardens of Montreal and Quebec, established in the year 1871 and amended 1873.

Seven steamships, inward with general cargo, have been surveyed, in compliance as prescribed in the eighth section of the said Act.

In compliance with the further amendment of the said Act, assented to the 3rd of May, 1873, fifty-four steamships have cleared outwards with cargoes for Great Britain and Europe, have been surveyed, and cleared as per certificates filed in the Custom house of Quebec.

Six sailing vessels, inwards with cargoes, surveyed, in compliance of the eighth section of the said Act.

No sailing vessels outwards to report, their cargoes not coming under the stipulation of the said Act.

In compliance with the 16th and 18th sections of the Act, six different lots of merchandise, damaged, have been sold for and on account of whom they may concern.

In compliance with the 15th section of the by-laws four vessels have been valued for average.

In compliance with the 10th section of the by-laws seven steam vessels have been repaired; nine sailing vessels, wood, have been repaired.

Amount of fees received for the current year:—

Total amount received	$1,212 00
To experts' and office expenses	764 05
To balance	$447 95

E. & O. E.

JOHN DICK, Sen,
Port Warden.

Examined by JOHN DICK, jun., Clerk.
QUEBEC, 31st December, 1889.

WM. SMITH, Esq.,
Deputy Minister of Marine,
Ottawa.

APPENDIX No. 29.

REPORT OF THE PORT WARDEN FOR THE PORT OF HALIFAX, N.S., FOR THE CALENDAR YEAR ENDED 31st DECEMBER, 1889.

PORT WARDEN'S OFFICE,
HALIFAX, N.S., 31st December, 1889.

SIR,—I have the honour to submit my report for the year ending 31st December, 1889, accompanied by a statement of the receipts and expenditures during that period.

Surveys have been held by me on eleven steamers and fifteen sailing vessels, which arrived in a damaged condition during the year. The vessels were properly repaired and those of them bound to other ports with their cargoes have all arrived safely at their destinations.

No irregularities in connection with the office have occurred during the year.

I have the honor to be, Sir,
Your most obedient servant,
DAVID HUNTER,
Port Warden.

WM. SMITH, Esq.,
Deputy Minister of Marine,
Ottawa.

RECEIPTS and Expenditure of the Port Warden, Halifax, N.S., from 1st January to 31st December. 1889.

DR. CR.

—	$ cts.	—	$ cts.
To amount of fees received.....	2,169 29	By Paid assistants, office expenses, &c...	1,065 40
		Amount reverting to Port Warden...	1,103 89
	2,169 29		2,169 29

I hereby certify that the above is a true and correct statement of the receipts and expenditure of the Port Warden at Halifax, N.S., during the year 1889.

HALIFAX, N.S., 31st December, 1889.

DAVID HUNTER,
Port Warden.

APPENDIX No. 30.

REPORT OF THE PORT WARDEN FOR PORT HAWKESBURY, N.S., FOR THE CALENDAR YEAR ENDED 31st DECEMBER, 1889.

PORT HAWKESBURY, 31st December, 1889.

SIR,—I have the honour to submit to you my annual report of the doings of this office, and also a statement of the fees collected by me during the year now closed. There have been only four vessels repaired here this year. I have only been requested by the master of one of the vessels to hold survey, namely, the schooner "Cappilla," of Halifax, William Bell master, report of which you will please find enclosed.

A statement of the receipts of this office for the year ending 31st December, 1889:—

1 survey held on hull of schooner "Cappilla"..... $8 00

I do hereby certify that the above is a true and correct statement of all fees received as Port Warden during the year now closed.

I have the honour to be, Sir,

Your most obedient servant,

D. W. HENESEY.

Port Warden.

PORT HAWKESBURY, 31st December, 1889.

WILLIAM SMITH, Esq.,
Deputy Minister of Marine,
Ottawa.

NAMES OF VESSELS Arriving in Distress and Surveyed by the Port Warden of Port Hawkesbury, N.S., in 1889.

Date.	Name of Vessel.	Rig.	Where From.	Where Bound.	Port of Registry.	Description of Cargo.	Name of Master.	Nature of Damage Received.
1889.								
Nov. 5.	"Cappilla	Schooner....	P. E. Island....	Sydney	Halifax.....	Potatoes	William Bell....	Was in collision with steamer "Coila," of Glasgow, in the Strait of Canso, whilst on a voyage from Prince Edward Island to Sydney, Cape Breton. Repaired here on the marine railway and proceeded on her voyage.

D. W. HENESEY,
Port Warden.

PORT HAWKESBURY, N.S., 31st December, 1889.

APPENDIX No. 31.

REPORT OF THE PORT WARDEN FOR THE PORT OF PICTOU, N.S., FOR THE CALENDAR YEAR ENDED 31ST DECEMBER, 1889.

PICTOU, N.S., 31st December, 1889.

SIR,—I have the honour to herewith submit this my annual report as Port Warden of this port for the year ending this date:—

Amount of fees received for surveys	$93 50
Paid fees to assistants	10 00
Net revenue	$83 50

Respectfully submitted.

DANIEL McDONALD,
Port Warden.

Sworn before me at Pictou, this 31st day of December, 1889.
WM. MCLAREN, *J. P.*

WM. SMITH, Esq.,
Deputy Minister of Marine,
Ottawa.

APPENDIX No. 32.

REPORT OF THE PORT WARDEN FOR THE PORT OF NORTH SYDNEY, C.B., FOR THE CALENDAR YEAR ENDED 31st DECEMBER, 1889.

Port Warden's Office,
North Sydney, C.B., 10th January, 1890.

Sir,—I have the honour to report as follows: Surveys held, 5 sailing ships, 1 steamship.

The fees received during the year amounted to.....	$63 00
Office expenses.....	25 00
Net revenue.....	$38 00

I have the honour to be, Sir,
Your obedient servant,
DANIEL McKAY,
Port Warden.

Wm. Smith, Esq.,
Deputy Minister of Marine.
Ottawa.

APPENDIX No. 33.

REPORT OF THE PORT WARDEN FOR THE PORT OF SYDNEY, C.B., FOR THE CALENDAR YEAR ENDED 31st DECEMBER, 1889.

PORT WARDEN'S OFFICE,
SYDNEY, C.B., 31st December, 1889.

SIR,—I have the honour to submit a report of the transactions in connection with the office of Port Warden at Sydney, Cape Breton, ending the past year.

I have the honour to be, Sir,
Your most obedient servant,
JOHN LORWAY,
Port Warden.

WM. SMITH, Esq.,
Deputy Minister of Marine,
Ottawa.

RECEIPTS AND EXPENDITURE of the Port Warden, Sydney, Cape Breton, from 31st December, 1888, to 1889.

DR.	$ cts.	CR.	$ cts.
For surveys on steamers for bunker coals, entered in my office at $8	120 00	Office rent and stationery	40 00
For surveys on machinery and deck load	16 00	Amount reverting to Port Warden	96 00
	136 00		136 00

I hereby certify that the above is a true and correct statement.

JOHN LORWAY,
Port Warden.

SYDNEY, CAPE BRETON,
31st December, 1889.

APPENDIX No. 34.

REPORT OF THE PORT WARDEN FOR PRINCE EDWARD ISLAND FOR THE CALENDAR YEAR ENDED 31ST DECEMBER, 1889.

PORT WARDEN'S OFFICE,
CHARLOTTETOWN, 31st December, 1889.

SIR,—I have the honor to submit my annual report of the business of my office during the past season.

I have the honour to be, Sir,
Your obedient servant,
H. P. WELSH.
Port Warden.

WM. SMITH, Esq.,
Deputy Minister of Marine,
Ottawa.

RECEIPTS AND EXPENDITURE of the Port Warden's Office, P.E.I., for Year ending 31st December, 1889.

DR.	$ cts.	CR.	$ cts.
To Fees derived from grain laden vessels.	139 00	By Expense of office	8 00
Damaged goods	5 00	Commission to deputies	41 00
Survey on hatches	9 00	Balance	119 00
Other surveys	15 00		
	168 00		168 00

I hereby certify that the above is a correct statement.

H. P. WELSH.
Port Warden.

CHARLOTTETOWN, 31st December, 1889.

APPENDIX No. 35.

REPORT OF THE PORT WARDEN'S OFFICE, VANCOUVER, B.C.

Memorandum of Surveys made during the year 1889.

Jan. 12.—Surveyed hatches of the SS. "Parthia," from Japan, and found them properly covered with tarpauling and in good order..... $10 00
Called survey on SS. "Parthia"..... 16 00
2 00

We, the undersigned surveyors, called by J. C. Fullerton, Esq., Manager of C. P. SS. Co., and D. E. Brown, Esq., Agent of C. P. SS. Co., find that the damage to the cargo of the SS. "Parthia" was caused by the breaking of one of the dead lights on the port side, abaft No. 3 hatch, between decks, by the sea; and further find that considerable of the cargo has been damaged by salt water coming through the above mentioned broken dead light before it could be repaired, and that the removing and shifting of the said cargo aforesaid has caused breakage and chaffage to a considerable extent, the particulars of which are hereby annexed. And in our opinion we consider that the whole damage has not been caused by any neglect on the part of said SS. "Parthia," or its officers, and hereby advise that the whole of the cargo be forwarded to its destination.

M. W. THAIN, *Port Warden.*
CAPT. McPHADEN.
R. ALEXANDER.

Feb. 15.—Surveyed hatches of the SS. "Abyssinia" and found them properly covered, and all cargo in sight in good order and condition..... $10 00
" 16.—Called survey on SS. "Abyssinia"..... 16 00
26 00

We, the undersigned, having been called by J. C. Fullerton, Esq., Manager of the C. P. SS. Co., to survey the damaged cargo of said ship, find that the damage has been caused by the breaking of one of the waste pipes connected with bath room and closets, on the starboard side abaft No. 3 hatch, causing the water to flow into the hold, thereby damaging the cargo considerably, the extent of which cannot be ascertained until landed, when we will give a detailed loss. And we further find that the cargo has been properly stowed and that the accident has been caused by heavy straining of the ship on the voyage to this port; and that we recommend that it be forwarded to its destination to save further loss or deterioration to all whom it may concern.

M. W. THAIN, *Port Warden.*
CAPT. McPHADEN.
CAPT. MELLON.

Carried forward..... $ 52 00

	Brought forward	$ 52 00
Mar. 10.	—Surveyed hatches of SS. "Batavia," from Japan, and found them properly covered and all cargo in sight in good order	10 00
	Surveyed tug "Vancouver"	5 00
April 12.	—Surveyed hatches of SS. "Parthia"—all in good order	10 00
May 3.	—Surveyed hatches of SS. "Abyssinia"—in good order	10 00
June 10.	—Surveyed hatches of SS. "Parthia"—in good order	10 00
July 10.	—Surveyed hatches of SS. "Port Fairy"—in good order	10 00
" 19.	—Surveyed hatches of SS. "Abyssinia"—in good order	10 00
Aug. 1.	—Surveyed hatches of SS. "Batavia"—in good order	10 00
July 27.	—Held survey on ship "Titania"—found damage to vitrified pipe by breakage	5 00
Aug. 16.	—Surveyed hatches of SS. "Port Agusta"—in good order	10 00
" 29.	—Surveyed hatches of SS. "Parthia"—all in good order	10 00
Sept. 16.	—Surveyed hatches of SS. "Port Fairy"—all in good order	10 00
" 28.	—Surveyed hatches SS. "Abyssinia"—all in good order	10 00
Oct. 26.	—Surveyed hatches of SS. "Port Agusta"—all in good order	10 00
" 26.	—Extra survey of SS. "Port Agusta." I was called to survey the cargo of the SS. "Port Agusta," a portion of which had been damaged on the passage to this port from China. I find the said damage has been caused by sweating. I found the cargo properly stowed and dunnaged, and consider the ship not liable, as the damage has been caused by stress of weather on the passage to this port	16 00
Nov. 24.	—Surveyed hatches of SS. "Batavia," from Japan—all in good order	10 00
" 14.	—Surveyed wreck of the schooner "Oriole," Captain Liston, stranded on Point Gray, and condemned her for benefit of all concerned. Her starboard side is completely broken in, the keel and stem and sternpost all started and deck broken up—a total loss. Schooner and sails sold by Johnson, auctioneer, by order of insurers, for $26.00, as she lay on the beach	16 00
	Carried forward	224 00

	Brought forward.....	224 00
Nov. 25.—I was called to hold a survey on the cargo of SS. "Batavia," a portion of which had been damaged on the passage to this port from China. I found that the damage was caused by salt water; and further, I find the cargo properly stowed and dunnaged, and consider the ship not liable, as the whole of damage has been caused by stress of weather on the passage to this port.....		10 00

M. W. THAIN,
Per Deputy Port Warden,

C. GARDINER JOHNSON.

Dec. 7.—Survey on SS. "Abyssinia"—hatches and cargo in good order.....		10 00
	Total amount for surveys made.....	$244 00
	Office expenses.....	75 00
	Balance.....	$169 00

M. W. THAIN,
Port Warden.

Sworn to before me this 7th day of January, 1890.
M. A. MACLEAN,
J.P., P.M.

WILLIAM SMITH, Esq.,
Deputy Minister of Marine,
Ottawa.

APPENDIX No. 36.

REPORT OF THE PORT WARDEN FOR THE PORTS OF VICTORIA AND ESQUIMALT, FOR THE CALENDAR YEAR ENDED 31st DECEMBER, 1889.

VICTORIA, B.C., 8th January, 1889.

SIR,—I have the honour to forward the annual return of the Port Warden for the Ports of Victoria and Esquimalt for the year ended 31st December, 1889.

Surveys on cargoes		$ 245 00
do	hatches	60 00
do	repairs	32 00
		$ 337 00

I have the honour to remain, Sir,

Your obedient servant,

W. R. CLARKE,

Port Warden.

WILLIAM SMITH, Esq.,
Deputy Minister of Marine,
Ottawa.

APPENDIX No. 37.

REPORT OF THE PORT WARDEN FOR THE PORT OF ST. ANDREW'S FOR THE YEAR 1889.

St. Andrew's, 2nd January, 1890.

Feb.	4.—	To surveying	hatches	schooner	"Janet S.".....	$ 2 50
"	5.—	do	cargo	do	do ..	2 00
"	12.—	do	hatches	do	"Crestline.".....	2 50
"	14.—	do	cargo	do	do	2 00
Mar.	15.—	"	hatches	do	"Emma Louise"	2 50
						$11 50

JOHN WREN,
Port Warden.

William Smith, Esq.,
Deputy Minister of Marine,
Ottawa.

APPENDIX No. 38.

REPORT OF THE PORT WARDEN FOR THE PORT OF YARMOUTH, N.S., FOR THE YEAR 1889.

YARMOUTH, N.S., 31st December, 1889.

SIR,—According to instructions, I now make my report for the year 1889 as Port Warden for the Port of Yarmouth, N.S.

I have been called on nine times to hold surveys on wrecks and cargoes. The gross receipts of them have been $138 (one hundred and thirty-eight dollars). The net amount to myself has been $73 (seventy-three dollars).

I remain, yours obediently,

EBENEZER SCOTT.
Port Warden.

WILLIAM SMITH, Esq.,
Deputy Minister of Marine,
Ottawa.

APPENDIX No. 39.

REPORT OF THE PORT WARDEN FOR THE PORT OF SOUTH BAR, C.B., FOR THE YEAR 1889.

PORT WARDEN'S OFFICE,
SOUTH BAR, C.B., 31st December, 1889.

SIR,—I have the honour to submit my report of the business of this office for the past year:

To amount of fees received	$88 00
Expenses	15 00
Amount reverting to Port Warden	$73 00

I have the honour to be, Sir,
Your obedient servant,
Z. H. BARRINGTON,
Port Warden,

WILLIAM SMITH, Esq.,
Deputy Minister of Marine,
Ottawa.

ANNUAL REPORT

OF THE

DEPARTMENT OF FISHERIES,

DOMINION OF CANADA,

FOR THE CALENDAR YEAR

1889.

PRINTED BY ORDER OF PARLIAMENT.

OTTAWA:
PRINTED BY BROWN CHAMBERLIN, PRINTER TO THE QUEEN'S MOST EXCELLENT MAJESTY.

1890.

To His Excellency the Right Honorable Lord Stanley of Preston, P.C., G.C.B., &c., &c., &c., Governor General of Canada, &c., &c., &c.

MAY IT PLEASE YOUR EXCELLENCY :

The undersigned has the honor to present to Your Excellency the Annual Report of the Department of Fisheries for the Calendar year 1889.

All of which is respectfully submitted,

CHARLES H. TUPPER,
Minister of Marine and Fisheries.

OTTAWA, 10th April, 1890.

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FOR THE YEAR 1889.

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STATEMENT showing results of certain Returns respecting Shipping and Discharging of Seamen, received by the Department of Marine in accordance with the provisions of Chapter 74, Consolidated Statutes of Canada, from Shipping Masters throughout the Dominion, for the Half-years ended 30th June and 31st December, 1889.

NOTE.—Names printed in italics are Shipping Masters appointed under the Act, the others the Collectors of Customs who act as Shipping Masters.

QUEBEC.

Name of Port.	Name of County.	Name of Shipping Master.	For Half-year ended 30th June, 1889.			For Half-year ended 31st December, 1889.			Total Seamen Shipped.	Total Seamen Discharged.	Total Amount.
			Seamen Shipped.	Seamen Discharged.	Amount.	Seamen Shipped.	Seamen Discharged.	Amount.			
					$ cts.			$ cts.			$ cts.
Escoumains	Bonaventure	John E. Barry					No returns				
Gaspé	Gaspé	*F. G. Eden*	19	7	11 60	22	22	17 60	41	29	29 20
Magdalen Islands	Gaspé	J. B. F. Painchaud									
Montreal	Montreal	*Henry McKay*	341	404	291 70	1,014	1,711	1,020 30	1,355	2,115	1,312 00
New Carlisle	Bonaventure	P. C. Beauchesne									
New Richmond	Bonaventure	R. W. H. Dimock					No returns				
Percé	Gaspé	W. Flynn					do				
Quebec	Quebec	*J. U. Gregory*									
Rimouski	Rimouski	P. L. Gauvreau					No returns				
St. John's	St. John's	E. D. Philips					do				
Sorel	Richelieu	Joseph Mathieu		No returns							
Three Rivers	Three Rivers	A. A. Lantier					No returns				

NEW BRUNSWICK.

Alma	Albert	Robert Wright					No returns				
Bathurst	Gloucester	W. J. O'Brien					No returns				
Buctouche	Kent	R. Douglas					No returns				
Chatham	Northumberland	*J. J. Brown*	36	6	19 80						
Cocagne	Kent	A. K. Dysart					No returns				
Dalhousie	Restigouche	W. Montgomery					No returns				
Dorchester	Westmoreland	Walter Dobson	26	14	17 20	15	10	10 50	41	24	27 70
Fredericton	York	A. F. Street		2	0 60		No returns				
Grand Manan	Charlotte	T. Wooster	25	29	21 20		No returns				

STATEMENT showing certain Returns respecting Shipping and Discharging Seamen, &c.—*Continued.*

NEW BRUNSWICK—*Continued.*

Name of Port.	Name of County.	Name of Shipping Master.	For Half-year ended 30th June, 1889.			For Half-year ended 31st December, 1889.			Total Seamen Shipped.	Total Seamen Discharged.	Total Amount.
			Seamen. Shipped.	Seamen Discharged.	Amount	Seamen Shipped.	Seamen Discharged.	Amount.			
					$ cts.			$ cts.			$ cts.
Harvey	Albert	W. J. Reid	10	4	6 20	4	12	5 60	14	16	11 80
Hillsborough	Albert	John Wallace							58	12	32 60
Lepreaux	Charlotte	G. K. Hanson					No returns				
Moncton	Westmoreland	J. W. Binney	12	12	9 60		No returns				
Musquash	St. John	A. T. Dunn					No returns				
New Bandon	Gloucester	F. J. Foley					No returns				
Newcastle	Northumberland	V. B. Haddow					No returns				
North Joggins	Westmoreland	Rufus C. Ward					No returns				
Quaco	St. John	J. Carson	45	20	28 50	27	29	22 20	72	49	50 70
Richibucto	Kent	John Rusk	2	8	3 40						
Rockport	Westmoreland	R. C. Ward	9	5	6 00	11	1	5 80	20	6	11 80
Sackville	Westmoreland	W. C. Milner					No returns				
St. Andrews	Charlotte	*Samuel Billings*					No returns				
St. George	Charlotte	James McKay	2		1 00		4	1 20	2	4	2 20
St. John	St. John	*W. H. Purdy*	1,625	1,036	1,123 30	2,033	1,453	1,452 40	3,658	2,489	2,575 70
St. Stephens	Charlotte	H. Webber					No returns				
Shediac	Westmoreland						No returns				
Shippegan	Gloucester	Henry A. Sormany					No returns				

NOVA SCOTIA.

Advocate	Cumberland	James Ward	12		6 00	27		13 50	39		19 50
Amherst	Cumberland						No returns				
Annapolis	Annapolis	A. Fullerton				40	39	31 70			
Antigonish	Antigonish	R. Grant						No returns			
Apple River	Cumberland	J. W. Ward		No returns			Nil.				
Arichat	Richmond	*D. O'C. Madden*								No returns	
Aspey Bay	Victoria	D. McDonald					No returns				
Baddeck	Victoria	L. G. Campbell	4		2 00						
Barrington	Shelburne	D. Sargent	19		9 50	15	6	9 30	34	6	18 80
Bayfield	Antigonish	E. G. Randall					No returns				
Belliveau Cove	Digby	J. V. Stuart	32	31	25 30	43	32	31 10	75	63	56 40

Bear River	Digby	*T. H. Miller*	68	44	47 20	95	79	71 20	163	123	118 40
Beaver River	Colchester	R. Perry				No returns					
Bridgetown	Annapolis	S. S. Ruggles		Nil.		5	4	3 70	5	4	3 70
Bridgewater	Lunenburg	*J. H. Wade*	24	34	22 20	24	12	15 60	48	46	37 80
Caledonia	Cape Breton	*J. J. Campbell*					No returns				
Canada Creek	King's	S. W. Rawling		No returns		6	5	4 50			
Canso	Guysboro'	J. W. Young	5	2	3 10	5	2	3 10	10	4	6 20
Cape Sable Island	Shelburne	*Seth Smith*				10	4	6 20			
Clementsport	Annapolis	Chas. Ditmars	37	13	22 40	47	47	37 60	84	60	60 00
Cornwallis	King's	E. Rand					No returns				
Cow Bay	Cape Breton	W. W. Bown				7	9	6 20			
Digby	Digby	Botsford Viets					No returns				
Freeport	Digby	Isaiah Thurber	3		1 50	3	3	2 40	6	3	3 90
French Cross	King's	J. E. Orpen					No returns				
Great Bras d'Or	Cape Breton	D. Campbell					No returns				
Guysboro'	Guysboro'	J. A. Tory	23		11 50	5		2 50	28		14 00
Halifax	Halifax	*H. Bligh*	1,880	1,226	1,307 80	1,524	1,392	1,179 60	3,404	2,618	2,487 40
Hantsport	Hants	J. W. Lawrence	47	58	40 90						
Harbour au Bouche	Antigonish	E. Corbet	8		4 00						
Harbourville	King's	Chas. E. Morris		No returns			No returns				
Horton	King's	J. B. Davison									
Isaac Harbour	Guysboro'	J. D. Giffin	26		13 00						
Joggins	Cumberland	J. Moffatt					No returns				
Jordan Bay	Shelburne	M. D. McKenzie									
Lingan	Cape Breton	*Matthew Roche*					No returns				
Little Bras d'Or	Cape Breton	M. McDonald					No returns				
Little Glace Bay	Cape Breton	*J. J. Campbell*		No returns		53	44	39 70			
Liscomb	Guysboro'	James Hemlow					No returns				
Liverpool	Queen's	*W. A. Kenney*	229	96	143 30	171	40	97 50	400	136	240 80
Lockeport	Shelburne	George Stalker									
Londonderry	Colchester	Robert Dill					No returns				
Louisburg	Cape Breton	*W. H. McAlpine*	40	7	22 10	17	22	15 10	57	29	37 20
Lunenburg	Lunenburg	*William Young*	172	356	192 80	334	290	254 00	506	646	446 80
Mahone Bay	Lunenburg	B. Zwicker		No returns		68	7	36 10			
Main à Dieu	Cape Breton	George Rigby					No returns				
Maitland	Hants	Alex. Roy					do				
Margaree	Inverness	James Ross					do				
Margaretsville	Annapolis	D. W. Landers					do				
Merigomish	Pictou	Robert Murray					do				
Meteghan	Digby	B. A. Robichau					do				
North East Harbour	Shelburne	G. B. Swaine	17		8 50						
North Sydney	Cape Breton	*James Armstrong*	52	41	38 30	158	79	102 70	210	120	141 00
Parrsborough	Cumberland	A. S. Townshend	69	60	52 50	95	85	73 00	164	125	125 50
Pictou	Pictou	*M. Campbell*				41	47	34 60			
Port Acadia	Digby	A. Bourneuf	34	25	24 50						
Port Caledonia	Cape Breton	J. J. Campbell					No returns				
Port Gilbert	Digby	R. Sanderson	82	21	47 30	88	112	77 60	170	133	124 90
Port Greville	Cumberland	James Kerr	25		12 50	4	9	4 70	29	9	17 20
Port Hawkesbury	Inverness	*John Stapleton*					No returns				
Port Hood	Inverness	E. D. Tremain		Nil			Nil			Nil	
Port la Tour	Shelburne	J. W. Taylor	6	2	3 60	4		2 00	10	2	5 60

STATEMENT showing Returns respecting Shipping and Discharging Seamen, &c.—*Concluded.*

NOVA SCOTIA—*Continued.*

Name of Port.	Name of County.	Name of Shipping Master.	For Half-year ended 30th June, 1889.			For Half-year ended 31st December, 1889.			Total Seamen Shipped.	Total Seamen Discharged.	Total Amount.
			Seamen Shipped.	Seamen Discharged.	Amount.	Seamen Shipped.	Seamen Discharged.	Amount.			
					$ cts.			$ cts.			$ cts.
Port Lorne	Annapolis	W. Graves		Nil			Nil			Nil	
Port Medway	Queen's	E. E. Letson					No returns				
Port Mulgrave	Guysboro'	D. Murray, jun				2	8	3 40			
Port William	King's	G. S. Lockwood					No returns				
Port Williams	Annapolis	W. Graves					do				
Pubnico	Yarmouth	P. S. D'Entremont	53		26 50	12		6 00	65		32 50
Pugwash	Cumberland	J. H. Black					No returns				
Ratchford's River	Cumberland	F. F. Hatfield					do				
Richmond	Richmond	A. McDonald					do				
St. Ann's	Cape Breton	D. McAuley	5		2 50	5		2 50	10		5 00
St. Mary's River	Guysboro'	A. F. Falconer					No returns				
St. Peter's	Richmond	Donald Urquhart				2	1	1 30			
Sheet Harbour	Halifax	M. Macfarlane					No returns				
Shelburne	Shelburne	W. W. Atwood	120	9	62 70	30	12	18 60	150	21	81 30
Ship Harbour	Halifax	Vacant									
Sydney	Cape Breton	*R. McDonald*					No returns				
Thorne's Cove	Annapolis	E. H. Porter	16	5	9 50						
Truro	Colchester	George P. Nelson					No returns				
Tatamagouche	Colchester	J. A. G. Campbell	4	2	2 60	1	1	0 80	5	3	3 40
Wallace	Cumberland	Charles D. Kerr					No returns				
Walton	Hants	A. McN. Parker	9	5	6 00	7	3	4 40	16	8	10 40
Weymouth	Digby	N. B. Jones					No returns				
Windsor	Hants	H. W. Dimock	44	30	31 00	82	59	58 70	126	89	89 70
Wilmot	Annapolis	G. B. Reed					No returns				
Yarmouth	Yarmouth	W. H. Moody	327	230	232 50	373	334	286 70	700	564	519 20
PRINCE EDWARD ISLAND.											
Alberton	Prince	John P. Braman					No returns				
Cascumpec	Prince	James F. White					do				
Charlottetown	Queen's	*H. W. Mutch*									
Crapaud	Queen's	S. J. B. Leard			Nil.	5	1	2 80	5	1	0 80
Georgetown	King's	Charles Owen	26	15	17 50	48	32	33 60	74	47	51 10

Malpeque	Prince	J. M. MacNutt		Nil			Nil					
Montague Bridge	King's	J. M. Aitken	10		5 00		No returns					
Murray Harbour	King's	H. J. Brehaut					No returns					
Pinette	Queen's	A. Murchison	4		2 00							
Port Hill	Prince	W. Hopgood										
St. Peter's Bay	King's						No returns					
Souris	King's	Michael J. Foley										
Summerside	Prince	*Jacob Schurman*	19	2	10 10	31	13	19 40	50	15	29 50	
Tignish	Prince	George Conroy					No returns					
West Cape	Prince	Charles Stewart					No returns					
BRITISH COLUMBIA.												
New Westminster	New Westminster	John G. Auld	6	3	3 90	13	9	9 20	19	12	13 10	
Vancouver		J. M. Bowell				130	84	90 20				
Victoria	Victoria	W. Hamley				56	42	40 60				

APPENDIX No. 41.

LIST of persons to whom Rewards have been granted by the Government of Canada, for the year 1889, for gallant and humane services rendered in Saving Life from Shipwrecked Canadian Vessels, or by British or Foreign Governments for similiar services rendered by Canadian Vessels in Saving Life from Shipwrecked British and Foreign Vessels for same period.

Names and Designations of Persons.	Nature of Service Rendered.	Date of Service Rendered.	Description of Reward.
Captain Lawrence Gerrior, master; Mr. James Harvey, mate; Elias Landry and three other seamen of the barque "Magnolia," of Halifax, N. S.	Services rescuing shipwrecked crew of the brigantine "Mistletoe," of Liverpool, England, abandoned at sea.	Sept. 4, 1883	A gold watch to captain; a binocular glass to 1st mate, and £2 to each of the seaman by the British Governm't.
Captain Dunnville, ferryman at Hopewell, N. B.	Rescuing two men from drowning.	Aug. —, 1887	A binocular glass.
Captain Antonio de Iribar, of the Spanish schooner "Jesusa;" Senor Angel Fabio, of the Village of Mamburao, and Father Marciano Panda of Sablayan, near Manila.	Humane and generous services to the crew of the British ship "Monarch," of Halifax, N. S., wrecked on the coast of the Island of Mindoro.	Sept. 6, 1887	A gold medal to each.
J. W. McCall, Wm. Smith, W. C. Bantam, A. Bradt, James Hill, Joseph Crockett, W. Glover, James Ross; captain and crew of the lifeboat, stationed at Port Rowan, Ont.	Services in rescuing shipwrecked crews of the schooners "Tibbets" and "Bay Trader."	July 11, 1888	$5 to each man.
Captain John Pratt, master of the barque "Cupid," of Halifax, N. S.	Services in rescuing the crew of the deserted Italian barque "Pietro Marano."	Nov. 10, 1888	A silver medal by the Italian Government.
Captain C. E. Humphreys, master; J. Calabra, 2nd mate; Christian Hoy, Johan Harnisen and Thos. Anderson, seamen of the American ship "B. P. Cheney."	For humane and gallant services in rescue of shipwrecked crew of the barque "Sheila," of St. John, N.B.	do 27, 1888	A binocular glass to captain; a silver watch to 2nd mate, and $15 to each of the seamen.
Captain Martin Larsen, master of the British schooner "Aubrey A," of Lunenburg, N. S.	Services in rescuing crew of the Spanish brigantine "Esperanza," in the channel between Porto Rico and San Domingo.	Dec. 23, 1888	A medal and diploma by Spanish Government.
Captain F. Crepeau, of Sorel, P. Q.	Saving of nineteen lives from drowning on four different occasions, in the waters of the St. Lawrence.	.....	A binocular glass.
Captain Robt. Dickson, master of the Canadian schooner "Ella Maud."	For humane services in rescuing the shipwrecked crew of the American schooner "John C. Bowers."	.....	A gold medal by the United States Government.
Mr. Alexander Henderson.	Rescuing a young girl from drowning at Campbellford	Jan. —, 1889	A letter of thanks.

APPENDIX No. 41.—LIST of persons to whom Rewards have been granted by the Government of Canada, for the year 1889, &c.—*Concluded.*

Names and Designations of Persons.	Nature of Service Rendered.	Date of Service Rendered.	Description of Reward.
Captain A. Gautier, master of the French schooner "Voyageuse," of St. Servan, France.	Services in rescue of the surviving portion of the crew of the brigantine "Libbie H," of Halifax, N. S., abandoned at sea.	Feb. 3, 1889	A binocular glass.
John Hays, Hugh Munro, Daniel Martin and James Conway, of the Halifax Pilot Boats, Nos. 2 and 3.	Rescuing from a drifting boat, the crew and passengers of SS. "Coronet," abandoned at sea.	April 29, 1889	A letter of thanks to each of the four pilots.
Daniel Hunt, Stevedore.	Rescuing a man from drowning who had fallen into the water at one of the wharves at Halifax, at great risk and exposure of his own life.	Nov. —, 1889	A letter of thanks and $200.
Lyman McKinnon, James W. McGray, Lovitt Nickerson, James Sears and Freeman Nickerson, fishermen.	Rescuing shipwrecked crew of barque "Maggie M.," off Cape Negro Island.	do 11, 1889	A silver watch to the first man and a binocular to each of the others.

SIXTH ANNUAL REPORT

OF THE

DEPUTY MINISTER OF FISHERIES

FOR THE YEAR 1889.

To the Honorable
CHARLES H. TUPPER,
Minister of Marine and Fisheries.

SIR,—I have the honor to submit the annual report of the Department of Fisheries, for the calendar year ending 31st December, 1889.

With the exception of the Province of Nova Scotia, which shows a decrease in the yield of cod, mackerel and herring, and that of Manitoba, where a slight falling off is noticed in the catch of pickerel, pike and tullibee, it is satisfactory to be able to state that the fishing industry of the Dominion is in a thriving condition, and shows a general increase of $236,745 over the yield of last year. In this connection the Province of British Columbia takes a leading rank, showing an increase of nearly twelve million pounds of salmon in the canning industry.

CONDITION AND YIELD OF THE FISHERIES IN 1889.

The total value of the fisheries of Canada for the year 1889 is as follows:—

Nova Scotia	$6,346,722
British Columbia	3,348,067
New Brunswick	3,067,039
Ontario	1,963,122
Quebec	1,876,194
Prince Edward Island	886,430
Manitoba and North-West Territories	167,679
Showing an aggregate of	$17,655,256

As against $17,418,510 for the year 1888, or an increase of $236,745. This increase is made up as follows:—

British Columbia	$1,445,872
New Brunswick	125,176
Ontario	123,254
Quebec	16,181
Prince Edward Island	9,568

The other Provinces show a decrease as follows:—

Nova Scotia	$1,470,308
Manitoba and the North-West Territories	12,997

The above is exclusive of the consumption by Indians in British Columbia, which is given at $3,257,500, and that of Manitoba and the North-West Territories, also estimated at $58,000.

DETAILS.

The following table shows the value of the principal kinds of commercial fishes exceeding $100,000.

Kind of Fish.	Amount.	Decrease.	Increase.
	$	$	$
Cod	3,618,240	585,268	
Salmon	3,141,925		1,234,525
Herring	2,498,357		144,123
Lobsters	1,484,488		1,100
Mackerel	980,396	51,263	
Whitefish	685,096	17,228	
Trout	553,369		43,308
Haddock	532,948	415,784	
Hake	474,856	11,684	
Pollock	308,784	75,500	
Fish oils	407,815		17,165
Seal skins	367,283		55,766
Smelts	298,951		76,277
Oysters	189,897		25,995
Pickerel	182,381	12,077	
Alewives	166,441		37,900
Halibut	160,059		34,654
Eels	153,708	167,640	
Sturgeon	102,127	8,989	

GENERAL REMARKS.

The above table shows at a glance which particular branch of the fishing industry prospered and which failed or remained stationary.

The decline of over one million dollars is to be found in the cod, haddock, hake and pollock fisheries, the staple commercial fish of the Dominion. This unsuccessful result was not due to any scarcity of fish, but to the stormy and unfavorable weather which prevailed during the season.

Salmon shows a large increase of over one million dollars, due principally to an unprecedentedly large catch in British Columbia.

A slight decrease is noticeable in the mackerel fishery, owing to the fact that these fish visited our shores too late in the season to make fishing profitable. Still, as prices ruled high, the fishermen did not fare too bad in this respect.

Whitefish shows a slight falling off from the yield of last year, undoubtedly due to a less vigorous prosecution of the fishery in certain parts of Ontario.

The smelt fishery shows a decided improvement, the increase over the previous year being given at $76,277. Whether this is due to the effect of more stringent regulations for the protection of this valuable industry, and to a strict enforcement of the law, it is too early to determine.

REMARKS RELATING TO THE FISHERIES OF

NOVA SCOTIA.

The total value of the fisheries in this Province again show a large shortage, the figures being $6,346,722, against $7,817,030 in 1888, or a decrease of $1,470,308. This decline was pretty general, not being confined to a few localities. In the case of Cape Breton, it is ascribed to the use of purse seines and to a scarcity of bait, while

in the division of Nova Scotia proper the falling off in the yield of the deep-sea fisheries is partially due to the withdrawal of banking vessels.

The cod fishery in Cape Breton was a failure. It shows a decrease of 165,901 cwts., as compared with 1888 which was of itself a poor year.

The catch of herring was small; mackerel, a little below that of last year; bus the high prices realized did a good deal towards alleviating the heavy deficienciet which occurred in nearly all other branches of the fisheries. Lobster fishing may be described as satisfactory, an early spring being of material advantage to fishermen and packers. Salmon shows a decrease of ten per cent.

The Inspector of Fisheries for the Island of Cape Breton again lays great stress on the damage done to the inshore fisheries by purse seines, as well as by trawls or set lines, and he strongly urges the advisability of prohibiting these modes of fishing within three miles of headlands.

NEW BRUNSWICK.

The returns of this Province show an increase of $125,175, which is very satisfactory, considering the succession of bad years experienced since 1886. This increase is especially noticeable in cod, smoked herrings, halibut, shad and smelts. The shad fishery of the Bay of Fundy was abundant, and it is suggested that, in order to give it due protection, a regulation be made prohibiting the catching of these fish before the 1st July. Salmon continues to show a decline. The catch of mackerel was poor. These fish failed to visit the coasts of New Brunswick in large numbers, although abundant in Nova Scotia. The catch of lobsters was about the same as that of last year. The yield of oysters is increasing.

PRINCE EDWARD ISLAND.

The yield of the fisheries in this Province shows an increase of $9,568, as compared with that of 1888, although some branches of the fishery exhibit a considerable falling off. The catch of mackerel was about equal to that of 1888. The fish struck in early, but very few schools were seen later in the season. Herring were abundant. Lobsters show an increase, although about 2,000 less traps were used. This success is due to the early season, which gave fishermen a fortnight's additional fishing. The oyster fishery shows an increase of 5,396 barrels. The protection afforded to the inshore fisheries by Government cruisers is said to have been greatly appreciated by the fishermen.

QUEBEC.

The returns for the Lower St. Lawrence and Gulf Division show and increase of $131,167 over the yield of 1888, while the total increase for the whole Province is set down at $16,181.

Cod fishing was good, and fish struck earlier than usual, although scarcity of bait and rough weather in the fall somewhat interfered with the catch in some localities. Spring herring were abundant; the fall fishery, however, proved a failure, This is attributed to the enormous destruction of herring for manuring purposes. Mackerel fishing proved a complete failure, except at Magdalen Islands, where some 4,000 barrels were caught. Lobsters show a slight increase, due to an early spring, and a larger number of traps. The seal fishery was again a failure.

The inland waters of the Province show a decrease of $114,986.

ONTARIO.

It is again a pleasing duty to have to record a continuance of an increase in the yield and value of the fisheries of this Province. Last year's statistics gave the total value of the fisheries of Ontario at $1,839,869, while this year they are set down at $1,963,123, an increase of $123,254. The whitefish and salmon-trout fisheries—the staple fishing industries of this Province—are in a healthy condition, while the strict enforcement of the fishery laws gives assurance of continued prosperity for the future.

MANITOBA AND NORTH-WEST TERRITORIES.

The yield of the fisheries in the above Provinces shows a slight decline, undoubtedly due to a less vigorous prosecution of the fishery in certain localites.

The Inspector treats at length on the alleged depletion of whitefish in the Manitoba waters, and claims that there is no cause for undue alarm so long as the fishery laws and regulations are strictly enforced. He recommends the establishment of a hatchery at Winnipeg for the purpose of stimulating the yield of whitefish and other varieties as may be made indigenous to the waters of Manitoba. A change is suggested in the close season for whitefish, as it is established that the present dates do not cover the most important breeding period of this valuable fish.

There does not seem to be any improvement in the matter of checking the injudicious slaughter of whitefish on their spawning beds by Indians and Hudson's Bay officials, who kill them in immense numbers, just at a time when they are reproducing their species, for the purpose of feeding dogs. I cannot help repeating the remarks made on that head in my report of last year: that until Indian Agents are sufficiently convinced of the great injury such wanton abuses will eventually entail upon Indians themselves, very little good can be accomplished in the direction of protecting the fisheries of Manitoba and the North-West Territories.

BRITISH COLUMBIA.

The returns from this Province show an enormous increase of nearly $1,500,000 over the yield of 1888; due to the unprecedented run of salmon in the Fraser River, where the pack reached 14,789,856 lbs. The yield of salmon on the Skeena and Naas Rivers was also large. It is scarcely possible that this phenomenal catch can be maintained, and it has been deemed expedient to limit the number of licenses to 500; 350 to be divided among canneries on the Fraser and 150 to be issued to local fishermen.

The operation of the regulations of 1888, were, by Order in Council, partially suspended for 1889. Recently a delegation representing the salmon canners of British Columbia visited Ottawa and presented in person their views on certain regulations which they claimed would operate injuriously to the canning industry on the Fraser River. Owing to these representations, it was considered expedient by the Department that the size of mesh of salmon nets should be reduced to $5\frac{3}{4}$ inches instead of 6 in., to change the weekly close season to commence at 6 p.m. Saturday instead of 6 a.m., and as above mentioned to limit the number of licenses to be issued.

Reference to part II Supt. of Fish Culture's Report, will show that many canners attribute the enormously increased catch in a great measure to the operations of the hatchery at New Westminster. It is gratifying to note this increase in the face of a steady decline in the Columbia River.

GENERAL RECAPITULATION

Of the Yield and Value of the Fisheries in the Dominion of Canada, for the Years 1888 and 1889.

Kinds of Fish.		1888.		1889.	
		Quantity.	Value.	Quantity.	Value.
			$ cts.		$ cts.
Cod	Cwt.	1,050,847	4,203,388 00	904,560	3,618,240 00
Boneless Cod	Lbs.	3,000	120 00	...	...
Herring, pickled	Brls.	341,077	1,364,308 00	286,678	1,165,724 00
do smoked	Boxes.	1,497,890	373,272 50	2,685,170	666,342 25
do frozen	No.	22,305,500	133,833 00	32,895,881	666,291 41
do fresh	Lbs.	9,653,308	482,821 40		
Lobsters, preserved, in cans	"	9,597,773	1,207,033 80	10,637,233	1,276,468 20
do in shell, alive, &c	Tons.	6,288	276,354 76	5,247	208,020 00
Salmon, pickled	Brls.	8,464	109,978 00	6,704	84,740 00
do fresh	Lbs.	4,640,660	680,432 00	4,267,173	634,734 20
do preserved, in cans	"	8,878,156	1,110,874 80	20,141,152	2,417,508 16
do smoked	"	30,576	6,115 20	24,714	4,943 00
Mackerel, preserved, in cans	"	63,563	7,883 01	196,212	23,544 88
do fresh	"	540,600	32,436 00	542,500	32,550 00
do pickled	Brls.	62,756	941,340 00	62,237	874,302 00
Haddock	Cwt.	237,183	948,732 00	125,662	532,948 00
Hake	"	121,635	486,540 00	118,714	474,856 00
Pollock	"	121,071	484,284 00	77,196	308,784 00
Trout	Lbs.	4,499,860	449,381 00	5,125,493	512,549 30
do pickled	Brls.	6,088	60,680 00	4,082	40,820 00
Whitefish, pickled	"	7,563	75,630 00	3,986½	39,865 00
do fresh	Lbs.	8,677,256	626,694 28	9,009,122	645,231 30
Smelt	"	3,723,772	222,674 66	5,011,058	298,951 78
Sardines	Hogsheads.	16,941⅔	104,428 00	23,804	71,412 00
Oysters	Brls.	56,234	163,902 00	63,049	189,897 00
Hake Sounds	Lbs.	103,557	103,557 00	79,489½	79,489 50
Cod, Tongues and Sounds	"	16,606	21,560 00	307,247	19,253 50
Alewives	Brls.	28,565	128,541 50	37,470	166,441 00
Shad	Lbs.	514,251	30,855 06	170,330	10,219 80
do pickled	Brls.	3,950	39,500 00	4,868	48,145 00
Eels do	"	22,594	206,570 00	7,100	71,000 00
do	Lbs.	1,590,145	114,778 70	1,378,473	82,708 38
Halibut	"	1,368,808	125,405 80	1,903,115	160,059 00
Sturgeon	"	1,892,518	111,116 28	1,773,685	102,127 72
Maskinongé	"	786,981	47,218 86	755,203	45,312 18
Bass	"	1,034,846	62,090 76	1,153,487	55,725 16
Pickerel	"	3,484,416	194,458 96	3,264,501	182,381 92
Pike	"	1,500,878	55,333 90	1,743,444	69,287 79
Winninish	"	100,000	6,000 00	100,000	6,000 00
Tom Cod or Frost Fish	Lbs.	1,299,895	51,995 80	...	26,580 00
Flounders	"	83,650	8,365 00	84,300	8,430 00
Squid	Brls.	12,446	49,784 00	11,649	46,596 00
Oolâchans, pickled	"	282	2,820 00	380	3,800 00
do fresh	Lbs.	20,200	2,020 00	82,500	8,250 00
do smoked	"	200	40 00	6,700	1,340 00
Clams	...	...	3,000 00	...	19,950 00
Fur Seal Skins	No.	27,983	279,830 00	33,570	335,700 00
Hair do	"	32,562	31,687 00	33,333	31,583 00
Sea Otter Skins	"	100	7,500 00	115	11,500 00
Porpoise Skins	"	455	1,847 00	777	3,151 00
Fish Oils	Galls.	960,541	390,650 90	984,183	407,815 00
Coarse and Mixed Fish	Brls.	40,202	208,851 63	27,275	147,852 48
Fish used as Bait	"	159,391	231,586 50	217,609	261,347 00
Fish used as Manure	"	126,449	63,224 50	60,563	30,281 00
Guano	Tons.	1,158	28,950 00	984	24,600 00
Crabs and Prawns, in B.C	...	...	7,500 00	...	10,750 00
Fish, assorted, in B.C	...	...	...	942,325	52,486 25

GENERAL RECAPITULATION

Of the Yield and Value of the Fisheries in the Dominion of Canada, &c.—*Concluded.*

Kinds of Fish.	1888.		1889.	
	Quantity.	Value.	Quantity.	Value.
		$ cts.		$ cts.
Fish, assorted, Halifax markets	.....	45,500 00	.....	40,500 00
Fish for home consumption not included in Returns	.....	203,235 20	.....	295,870 87
Total	.....	17,418,510 76	.....	17,655,256 03

RECAPITULATION.

Provinces.	Value.		Decrease.	Increase.
	1888.	1889.		
	$ cts.	$ cts.	$ cts.	$ cts.
Nova Scotia	7,817,030 42	6,346,722 00	1,470,308 40	.....
New Brunswick	2,941,863 05	3,067,039 04	.....	125,176 00
Quebec	1,860,012 96	1,876,194 19	.....	16,181 23
Prince Edward Island	876,862 74	886,430 84	.....	9,568 10
British Columbia	1,902,195 50	3,348,067 61	.....	1,445,872 11
Ontario	1,839,869 09	1,963,122 80	.....	123,253 79
Manitoba and North-West Territories	180,677 00	167,679 55	12,997 45	.....
Totals	17,418,510 76	17,655,256 03	1,483,305 87	1,720,051 23
Increase over 1888	.....	.....	.....	236,745 36

COMPARATIVE STATEMENT

Of Production in each Branch of the Fisheries in the respective Provinces of the Dominion of Canada, in 1888 and 1889.

PROVINCE OF NOVA SCOTIA.

Kinds of Fish.	1888.		1889.	
	Quantity.	Value.	Quantity.	Value.
		$ cts.		$ cts.
Salmon ..... Brls.	3,236	51,776 00	2,377	38,032 00
do fresh ..... Lbs.	477,214	95,442 80	407,454	81,490 40
do smoked ..... "	10,176	2,035 20	7,516	1,503 00
do preserved ..... Cans.	33,210	4,981 50	9,784	1,466 80
Mackerel ..... Brls.	45,009	675,135 00	43,038	586,317 00
do preserved ..... Cans.	20,688	2,482 56	62,258	7,470 40
do fresh ..... Lbs.	540,600	32,436 00	542,500	32,550 00
Herring ..... Brls.	175,285	701,140 00	127,605	529,432 00
do smoked ..... Boxes.	33,000	8,250 00	35,835	8,958 50
do frozen or fresh ..... Lbs.	3,120	312 00	5,760	691 20
Alewives ..... Brls.	14,841	66,784 50	22,858	102,862 00
do smoked ..... No.	100,000	800 00	150,000	1,200 00
Cod, dried ..... Cwt.	753,459	3,013,836 00	587,558	2,350,232 00
do boneless ..... Lbs.	3,000	120 00	.....	.....
Cod Tongues and Sounds ..... Brls.	16,029	15,790 00	1,328	13,280 00
Haddock ..... Cwt.	216,505	866,020 00	115,956	492,324 00
Finnan Haddies ..... Lbs.	49,000	1,960 00	280,000	11,200 00
Pollock ..... Cwt.	84,609	338,436 00	56,326	225,304 00
Hake ..... "	77,699	310,796 00	79,690	318,760 00
do Sounds ..... Lbs.	68,580	68,580 00	42,328	42,328 00
Halibut ..... "	991,690	99,169 00	1,155,924	115,592 40
Shad ..... Brls.	765	7,650 00	1,012	9,585 00
Bass ..... Lbs.	23,690	1,421 40	251,541	1,608 40
Trout ..... "	161,522	16,152 20	148,448	14,844 80
Squid ..... Brls.	12,268	49,072 00	11,360	45,440 00
Smelt ..... Lbs.	491,138	29,468 28	480,760	28,845 50
Eels ..... Brls.	4,379	43,790 00	3,468	34,680 00
Oysters ..... "	1,589	4,767 00	2,532	7,596 00
Lobsters, preserved ..... Cans.	5,756,891	690,826 92	6,181,763	741,811 80
do shipped fresh, alive, &c ..... Tons.	4,340	217,914 76	4,212	176,970 00
Fish Oils ..... Galls.	511,357	204,542 80	368,290	147,315 80
Guano ..... Tons.	893	22,325 00	661	16,525 00
Fish used as Bait ..... Brls.	72,434	108,651 00	59,102	88,653 50
do Manure ..... "	26,509	13,254 50	18,256	9,127 50
Amount sold in Halifax market	.....	45,500 00	.....	40,500 00
Home consumption of various counties, as per return	.....	5,412 00	.....	20,400 00
Clams	.....	.....	.....	1,825 00
Total	.....	7,817,030 42	.....	6,346,722 00
Decrease in 1889	.....	.....	.....	1,470,308 42

COMPARATIVE STATEMENT

Of Productions in each Branch of Fisheries, &c.—*Continued.*

PROVINCE OF NEW BRUNSWICK.

Kinds of Fish.		1888.		1889.	
		Quantity.	Value.	Quantity.	Value.
			$ cts.	$ cts.	$ cts.
Codfish	Cwt.	86,695	346,780 00	110,003	440,012 00
Herring	Brls.	95,225	380,900 00	81,241	324,964 00
do smoked	Boxes.	1,448,250	362,062 50	2,614,900	653,725 00
do frozen	No.	22,305,500	133,833 00	22,247,860	133,487 16
Mackerel	Brls.	2,094	31,410 00	2,147	32,205 00
do preserved	Lbs.	8,515	1,277 25	34,684	4,162 08
Haddock	Cwt.	18,226	72,904 00	7,507	30,028 00
Pollock	"	36,462	145,848 00	20,870	83,480 00
Hake	"	31,476	125,904 00	31,906	127,624 00
Halibut	Lbs.	17,970	1,797 00	47,560	4,756 00
Salmon, pickled	Brls.	98	1,568 00	30	480 00
do fresh, in ice	Lbs.	1,186,740	237,348 00	1,120,239	224,047 80
do preserved, in cans	"	11,002	1,650 30	9,240	1,386 00
do smoked	"	7,000	1,400 00	4,300	860 00
Alewives	Brls.	12,951	58,279 50	13,405	60,322 50
Trout	Lbs.	53,725	5,372 50	72,230	7,223 00
Smelt	"	3,149,468	188,968 08	3,960,938	237,656 28
Shad	Brls.	3,185	31,850 00	3,855	38,550 00
Eels	"	16,185	161,850 00	1,668	16,680 00
Sardines	Hogsheads.	15,963	95,778 00	18,145	54,435 00
Bass	Lbs.	151,827	9,109 62	87,806	5,268 36
Pickerel	"	132,200	7,932 00	157,900	9,474 00
Perch	"	45,500	1,365 00	24,700	741 00
Oysters	Brls.	16,384	49,152 00	17,760	53,280 00
Lobsters, preserved	Cans.	1,843,368	276,505 20	1,800,573	216,068 76
do	Tons.	1,948	58,440 00	1,035	31,050 00
Cod Tongues and Sounds	Brls.	17	170 00	40	400 00
Hake Sounds	Lbs.	34,977	34,977 00	37,161½	37,161 50
Fish Oil	Galls.	90,692	36,276 80	104,724	41,889 60
Fish Guano	Tons.	265	6,625 00	323	8,075 00
Fish used as Manure	Brls.	25,100	12,550 00	29,207	14,603 50
do Bait	"	30,605	45,907 50	45,185	67,777 50
Squid	"	178	712 00	289	1,156 00
Frost Fish	Lbs.	174,895	6,995 80	214,500	8,580 00
Flounders	"	83,650	8,365 00	84,300	8,430 00
Clams	Brls.	.....	.....	2,000	12,000 00
Total		.....	2,941,863 05	.....	3,067,039 04
Increase in 1889		.....	.....	.....	125,176 00
Fish used in District No. 1, not included above		.....	.....	.....	75,000 00

COMPARATIVE STATEMENT

Of Production in each Branch of Fisheries, &c.—*Continued.*

PROVINCE OF PRINCE EDWARD ISLAND.

Kinds of Fish.		1888.		1889.	
		Quantity.	Value.	Quantity.	Value.
			$ cts.		$ cts.
Cod	Cwt.	39,062	156,248 00	21,196	84,784 00
do boneless	Lbs.	.....	.....	.....	.....
Herring	Brls.	32,883	131,532 00	33,940	135,760 00
do smoked	Boxes.	.....	.....	.....	.....
Mackerel	Brls.	12,648	189,720 00	12,450	186,750 00
do preserved	Cans.	34,360	4,123 20	99,270	11,912 40
Haddock	Lbs.	92,600	3,704 00	90,000	3,600 00
Hake	Cwt.	12,460	49,840 00	7,118	28,472 00
Salmon, fresh	Lbs.	1,563	312 60	1,400	280 00
Alewives	Brls.	595	2,677 50	457	2,056 50
Halibut	Lbs.	8,700	870 00	3,730	373 00
Bass	"	700	42 00	1,600	96 00
Trout	"	74,900	7,490 00	56,820	5,682 00
Smelt	"	.....	.....	346,100	20,766 00
Eels	Brls.	1,937	19,370 00	1,814	18,140 00
Oysters	"	35,861	107,588 00	41,257	123,771 00
Lobsters preserved in cans	Lbs.	1,446,227	173,547 24	2,060,947	247,313 64
Cod and hake sounds	"	168	1,680 00	13,647	4,573 50
Fish Oils	Galls.	18,333	7,333 20	13,852	5,540 80
Manure	Brls.	11,580	5,790 00	13,100	6,550 00
Guano	Tons.	.....	.....	.....	.....
Fresh fish for consumption	Lbs.	.....	15,000 00	.....	.....
Shad	Brls.	.....	.....	.....	10 00
Total		.....	876,862 74	.....	886,430 84
Increase in 1889		.....	.....	.....	9,568 10

COMPARATIVE STATEMENT

Of Production in each Branch of Fisheries, &c.—*Continued.*

PROVINCE OF QUEBEC.

Kinds of Fish.	1888.		1889.	
	Quantity.	Value.	Quantity.	Value.
		$ cts.		$ cts.
Cod ..... Cwt.	171,631	686,524 00	185,803	743,212 00
Herring, pickled ..... Brls.	30,569	122,276 00	36,356	145,424 00
do smoked ..... Boxes.	8,640	2,160 00	1,435	358 75
Mackerel ..... Brls.	3,005	45,075 00	4,602	69,030 00
Haddock ..... Cwt.	1,036	4,144 00	1,749	6,996 00
Halibut ..... Lbs.	104,948	10,494 80	90,851	9,085 10
Salmon, pickled ..... Brls.	889	14,224 00	548	8,768 00
do fresh ..... Lbs.	498,143	99,628 60	551,080	110,216 00
do preserved, in cans ..... "	.....	.....	.....	.....
Shad ..... "	514,251	30,855 06	170,330	10,219 80
Eels ..... "	1,490,295	89,417 70	1,236,591	74,195 46
do pickled ..... Brls.	93	930 00	150	1,500 00
Sardines ..... "	2,780	8,340 00	5,659	16,977 00
Sturgeon ..... "	.....	.....	.....	.....
do ..... Lbs.	584,220	35,053 20	458,325	27,499 50
Trout ..... "	538,550	53,855 00	489,700	48,970 00
do ..... Brls.	161	1,610 00	123	1,230 00
Winnipish ..... Lbs.	100,000	6,000 00	100,000	6,000 00
Bar and Whitefish ..... "	.....	.....	193,333	15,466 64
Whitefish ..... "	293,472	23,477 76	.....	.....
Maskinongé ..... "	136,160	8,169 60	129,130	7,747 80
Bass ..... "	186,775	11,206 50	110,920	6,655 20
Pickerel ..... "	655,465	39,327 90	482,619	28,957 14
Pike ..... "	388,530	19,426 50	354,880	17,744 00
Tom Cod ..... Bush.	75,000	45,000 00	30,000	18,000 00
Cod Tongues and Sounds ..... Brls.	392	3,920 00	100	1,000 00
Lobsters, canned ..... Lbs.	551,287	66,154 44	593,950	71,274 00
Small and Mixed Fish ..... Brls.	24,487	104,412 00	11,216	60,303 00
Seal Skins ..... No.	29,062	29,062 00	26,333	26,333 00
Porpoise Skins ..... "	455	1,847 00	777	3,151 00
Fish Oils ..... Galls.	275,814	110,325 60	355,897	142,358 80
Fish used as Bait and Manure ..... Brls.	114,612	108,658 00	113,322	104,916 00
Guano ..... Tons.	.....	.....	.....	.....
Smelts ..... Lbs.	75,166	3,758 30	171,160	8,558 00
Fish used as local consumption ..... Brls.	18,670	74,680 00	21,012	84,048 00
Total	.....	1,860,012 96	.....	1,876,194 19
Increase	.....	.....	.....	16,181 23

COMPARATIVE STATEMENT

Of Production in each Branch of Fisheries, &c.—*Continued.*

PROVINCE OF ONTARIO.

Kinds of Fish.	1888.		1889.	
	Quantity.	Value.	Quantity.	Value.
		$ cts.		$ cts.
Whitefish ..... Brls.	4,287	42,870 00	3,518½	35,185 00
do ..... Lbs.	6,134,244	490,739 52	6,298,507	503,880 56
Salmon trout..... Brls.	5,907	59,070 00	3,959	39,590 00
do ..... Lbs.	3,650,563	365,056 30	4,344,270	434,427 00
Herring ..... Brls.	7,115	28,460 00	7,536	30,144 00
do ..... Lbs.	9,527,288	476,364 40	10,452,261	522,613 05
Maskinongé ..... "	650,821	39,049 26	626,073	37,564 38
Bass ..... "	671,854	40,311 24	701,620	42,097 20
Pickerel ..... "	2,209,901	132,594 06	2,174,344	130,460 64
Pike..... "	455,348	22,767 40	792,417	39,620 85
Sturgeon ..... "	1,064,818	63,889 08	886,022	53,161 32
Eels..... "	99,850	5,991 00	141,882	8,512 92
Coarse Fish..... "	2,152,121	64,563 63	2,314,767	69,443 01
Fish for Home Consumption..... "	271,440	8,143 20	547,429	16,422 87
Total	.....	1,839,869 09	.....	1,963,122 80
Increase in 1889.....	.....	.....	.....	123,253 79

Approximate Yield and Value of the Fisheries for the Years 1888 and 1889.

MANITOBA AND NORTH-WEST TERRITORIES.

Kinds of Fish.	1888.		1889.	
	Quantity.	Value.	Quantity.	Value.
		$ cts.		$ cts.
Whitefish, fresh..... Lbs.	2,249,540	112,477 00	2,517,282	125,884 10
do salt..... Brls.	3,276	32,760 00	468	4,680 00
Pickerel (Doré) ..... Lbs.	486,850	14,605 00	449,638	13,490 14
Pike (Jackfish)..... "	657,000	13,140 00	596,147	11,922 94
Sturgeon ..... "	27,980	1,399 00	110,738	5,536 90
Catfish ..... "	.....	.....	24,025	480 50
Trout ..... "	12,100	605 00	.....	.....
Tullibee ..... "	273,000	2,730 00	172,704	1,727 04
Mixed fish..... "	286,580	2,961 00	395,793	3,951 93
Total	.....	180,677 00	.....	167,679 55
Decrease in 1889	.....	.....	.....	12,997 45

COMPARATIVE STATEMENT

Of the Production in each Branch of Fisheries, &c.—*Continued.*

PROVINCE OF BRITISH COLUMBIA.

Kinds of Fish.	1888.		1889.	
	Quantity.	Value.	Quantity.	Value.
		$ cts.		$ cts.
Salmon ..... Brls.	4,241	42,410 00	3,749	37,460 00
do fresh ..... Lbs.	2,477,000	247,700 00	2,187,000	218,700 00
do preserved, in cans ..... Lbs.	8,833,944	1,104,243 00	20,122,128	2,414,655 36
do smoked ..... Lbs.	13,400	2,680 00	12,900	2,580 00
Herring, fresh ..... Lbs.	122,900	6,145 00	190,000	9,500 00
do smoked ..... Lbs.	8,000	800 00	33,000	3,300 00
Trout, fresh ..... Lbs.	8,500	850 00	14,025	1,402 50
Sturgeon ..... Lbs.	215,500	10,775 00	318,600	15,930 00
Skil, salted ..... Brls.	484	8,712 00	1,560	18,720 00
Clams ..... Sacks.	.....	3,000 00	3,500	6,125 00
Halibut, fresh ..... Lbs.	229,500	11,475 00	605,050	30,252 50
do smoked ..... Lbs.	16,000	1,600 00	.....	.....
Oysters ..... Sacks.	2,400	2,400 00	3,000	5,250 00
Oolachans, pickled ..... Brls.	282	2,820 00	380	3,800 00
do smoked ..... Lbs.	200	40 00	6,700	1,340 00
do fresh ..... Lbs.	20,200	2,020 00	82,500	8,250 00
Fur Seal Skins ..... No.	27,983	279,830 00	33,570	335,700 00
Hair do ..... No.	3,500	2,625 00	7,000	5,250 00
Sea Otter Skins ..... No.	100	7,500 00	115	11,500 00
Walrus ..... No.	21	378 00	.....	.....
Fresh Oil ..... Galls.	64,345	32,172 50	141,420	70,710 00
Crabs and Prawns	.....	7,500 00	.....	10,750 00
Sardines ..... Lbs.	3,100	310 00	.....	.....
Smelt, fresh ..... Lbs.	8,000	480 00	52,100	3,126 00
Assorted or Mixed Fish ..... Lbs.	310,000	23,730 00	322,725	16,136 25
Fish for home consumption, Chinese laborers	.....	100,000 00	.....	100,000 00
Rock Cod ..... Lbs.	.....	.....	39,250	1,962 50
Tooshqua, fresh ..... Lbs.	.....	.....	268,350	13,417 50
Fish products	.....	.....	.....	2,250 00
Total	.....	1,902,195 50	.....	3,348,067 61
Increase	.....	.....	.....	1,445,872 11

THE FISHERY LAWS OF THE DOMINION.

TABLE of Close Seasons in force on 31st December, 1889.

Kinds of Fish.	Ontario.	Quebec.	Nova Scotia.	New Brunswick.	P. E. Island.	Manitoba and N. W. Ter.
Salmon (net fishing)		Aug. 1 to May 1.	Aug. 15 to March 1.	Aug. 15 to March 1.		
Salmon (angling)		Aug. 15 to Feb. 1.	Aug. 15 to Feb. 1.	Aug. 15 to Feb. 1		
Speckled Trout (*Salvelinus Fontinalis*).	Sept 15 to May 1.	Oct. 1 to Jan. 1.	Oct. 1 to April 1.	Oct. 1 to April 1.	Oct. 1 to Dec. 1.	Oct. 1 to Jan. 1.
Large Grey Trout, Lunge, Winninish and Land-locked Salmon.		Oct. 15 to Dec. 1.	Oct. 1 to April 1.	Oct. 1 to April 1.		
Pickerel (Doré)	April 15 to May 15.	April 15 to May 15.				April 15 to May 15.
Bass and Maskinongé	April 15 to June 15.	April 15 to June 15.				
Whitefish and Salmon Trout	Nov. 1 to Nov. 30.					
Whitefish		Nov. 10 to Dec. 1.				Oct. 5 to Nov. 10.
Sea Bass				March 1 to Oct. 1.		
Smelts		April 1 to July 1.	April 1 to July 1.	April 1 to July 1.	April 1 to July 1.	
		Bag net fishing prohibited, except under license.				
Lobsters		July 15 to Dec. 31.	July 1 to Dec. 31. On Atlantic coast, from Cape Canso to boundary line, U.S., July 15 to Dec. 31, in remaining waters of Nova Scotia and New Brunswick.	July 1 to Dec 31.	July 15 to Dec. 31.	
Sturgeon				Aug. 31 to May 1.		May 1 to June 15.
Oysters		June 1 to Sept. 15.	June 1 to Sept. 15.	June 1 to Sept. 15.	June 1 to Sept. 15.	

NOTE.—The following Regulations are applicable to the Province of British Columbia :—

1. Net fishing allowed only under license.
2. Salmon nets to have meshes of at least $5\frac{3}{4}$ inches extension measure.
3. Drift nets confined to tidal waters. No nets to bar more than one-third of any river. Fishing to be discontinued from 6 p.m. Saturday to 6 a.m. Monday.
4. The Minister of Marine and Fisheries to determine number of boats, seines or nets to be used on each stream.
5. The close season for trout is fixed from the 15th October to 15th March.

SYNOPSIS OF FISHERY LAWS.

Net fishing of any kind is prohibited in public waters, except under leases or license.

The seizure of nets is regulated so as to prevent the killing of young fish. Nets cannot be set or seines used so as to bar channels or bays.

A general weekly close-time is provided in addition to special close seasons.

The use of explosives or poisonous substances, for catching or killing fish, is illegal.

Mill dams must be provided with efficient fish-passes. Models or drawings will be furnished by the Department on application.

The above enactments and close seasons are supplemented in special cases, under authority of the Fisheries Act, by a total prohibition of fishing for stated periods.

FISH BREEDING.

Complete details and statements connected with fish breeding operations during the season of 1889 will be found in Part II of this Report.

FISHERIES PROTECTION SERVICE.

As the report of Lieut. Gordon, R.N., which forms part III of this report, deals very fully with the operations of the vessels engaged in the Protection Service during the year, it seems only necessary to here state that the following vessels comprised the fleet during the year—the steamers "Acadia," "La Canadienne," "Stanley" and "Cruiser," owned by the Government and commanded respectively by Lieut. Gordon, R. N., Commander Wakeham, Captains McLaren and Holmes; the steamer "Dream" (chartered), commanded by Captain J. H. Pratt; the schooner "Vigilant," owned by the Government, under command of Captain C. T. Knowlton, and the "Critic" (chartered), commanded by Captain J. H. Pouliot.

It will be observed that the number of schooners used in the fleet during the past season was reduced to two, the steamer "Stanley" taking the place of the sailing vessels formerly employed. This change has been found in the interest of the service, as a steamer is not dependent upon the wind to get about, and consequently can patrol a much more extensive coast than a sailing vessel. The question of employing steamers altogether for this service is one now being considered, and there is little doubt, should it be necessary to retain the Force, but that small steamers with a light draft of water and a small consumption of coal could be very advantageously used.

In addition to the work done the past season, several of the vessels rendered very material aid in the enforcement of the lobster regulations, securing a much more rigid observance of these than heretofore, and demonstrating very conclusively the advantage of having officers on the coast who are at all times in a position to act independently of the influences that very naturally embarrass a local officer. In this connection, I may state that one or two cases have been brought to the notice of the Department during the season in which local prejudices were so strong against the enforcement of fishery regulations that no local officer could be found who would execute the warrants issued by the Department's officials. The total cost of the Protection Service, the particulars of which appear under the proper heading, giving that of each vessel, amounted to the sum of $69,045.89. This sum will be reduced by the share of the cost of the "Cruiser," for the season chargeable to the Customs Department (the vessel being used jointly by the two Departments) amounting to $2,631.41, leaving the net cost of the Protection Service for the calendar year at $66,414.48, as against $77,102.00 in 1888.

The service during the past season has been carried on most satisfactorily, there being an evident desire on the part of United States fishing vessels to fairly observe the regulations, and friction between the masters and the officers of the Protection Force has been avoided, while the existence of the so called *modus vivendi* license system, has been an important factor in the maintenance of order and goodwill. The licenses issued numbered 78, as against 36 in 1888; the amount collected being $9,589.50, as against $3,831.00 in 1888, an increase of 42 licenses and $5,758.50 in collections in 1889 over the previous year.

As the two years for which the *modus vivendi* made provision in connection with the granting of these licenses expires on the 15th of February of next year, unless some new arrangement is reached or provision made for continuing the present system, recourse will be necessary to the much discussed provisions of the Treaty of 1818.

The only seizure made during the year was that of the United States' fishing schooner "Mattie Winship," Captain Conrod W. Ericson, 73 tons, of Gloucester, Mass., seized by Captain Knowlton, of the "Vigilant," for illegally fishing off the North Cape coast of Victoria County on the 31st May, 1889. This vessel was released under bond, and subsequently discharged upon the payment to the Crown of a fine of $2,000 and all expenses.

In the month of November judgment was given by the Vice Admiralty Court of Nova Scotia in the case of the schooner "David J. Adams," seized in 1886 for preparing to fish in the offing near Digby, N.S., decreeing the vessel's forfeiture and ordering that she be disposed of by public auction. This was done after due notice, when the vessel sold for the sum of $1,400.

FISHING BOUNTIES.

The payments made for this service are under the authority of an Act passed in 1882, intituled:—

"An Act to encourage the development of Sea Fisheries and the building of Fishing Vessels."

Since that period, the sum of $150,000 has annually been distributed among fishermen and fishing vessels entitled to receive the same under the regulations which the Act empowers the Governor General in Council to enact.

The total number of fishing bounty claims received for the year 1888 was 16,027, against 15,576 in 1887, an increase of 451 claims for the year 1888. Of this number 113 were rejected for non-compliance with the regulations and 328 held in abeyance for investigation.

The total number of claims paid during the year 1888 was 15,599, an increase of 183 as compared with the year 1887.

The total amount of bounties paid on the basis of $1.50 per ton to vessels, $3 per man to boat fishermen, was $150,185.53, a decrease of $13,572.39 as compared with the previous year. The decrease is chiefly due to a reduction of 50 cents per ton in the rate of bounty payable to vessels, in order to bring the expenditure within the statutory appropriation.

The number of vessels which received bounty in 1888 was 827, with a tonnage of 31,640 tons, an increase of 15 vessels and a tonnage of 671 tons.

The number of boats on which bounty was paid was 14,772, as against 14,605 in 1887, and the number of fishermen who received bounty was 28,256, an increase of 167 boats, as compared with the previous year.

For details of payments to vessels and boats, see Appendix No. 2.

Representations having been made to the Department that a change in the manner of distributing this bounty was desirable, circular letters of the form below were addressed to members of Parliament and others in the counties in which bounty money was distributed.

The circular, as will be seen, explains in detail the present mode of making the payments, and suggestions were requested looking to an improvement in the system:—

"Office of the Minister of Marine and Fisheries,

"Ottawa, 3rd June, 1889.

Sir,—You will doubtless remember that a discussion took place in the House of Commons last Session touching the system of distributing the annual grant of $150,000 in aid of the development of the sea fisheries, &c., under the provisions of chapter 96, Consolidated Statutes of Canada.

The method for securing the payment of the fishing bounty (so called) is at present as follows:—

Blank forms of claims are supplied to the fishermen through the fishery officers and Collectors of Customs, or other persons, at specified points, authorized to assist in the distribution of the bounty.

The claims, when completed, are delivered to the above named officers, and by them certified and transmitted to this Department.

Cheques in favor of each claimant, with schedules, are transmitted to the officers who certified the claims, for distribution.

Nova Scotia claims are paid by cheque on the Bank of Montreal at Halifax; New Brunswick claims are paid at the Bank of Montreal, St. John; Quebec claims at the Bank of Montreal, Ottawa; and Prince Edward Island claims at the Bank of Nova Scotia, at Charlottetown.

The regulations governing the payment of fishing bounties, approved of by an Order in Council of 30th September, 1888, and still in force, are appended.

Having promised to carefully consider suggestions for a change tending to the improvement of the mode of disbursing this money, I will be glad to have any opinion you may wish to offer on the subject.

I am, yours faithfully,

CHARLES H. TUPPER.

Of the replies received, at least two-thirds favor a continuance of the present system; one complains of the manner in which claims are verified; but in no case is any suggestion made looking to the payment of these claims by any other mode than a cheque in favor of the claimant.

The Department may therefore fairly conclude that the system, as a whole, is not susceptible of improvement.

EXPENDITURE.

The total expenditure of the Department for the fiscal year was $355,595.93, out of appropriations amounting to $375,000, leaving an unexpended balance of $19,904.07, which lapses to the treasury, no portion of this sum having been brought down for expenditure during the current fiscal year.

The sub-division of this expenditure is as follows:—

Fisheries	$	83,684 18
Fish-breeding		41,315 12
Fisheries protection service		69,693 82
Fishing bounty		149,990 63
Miscellaneous expenditure		10,912 18
Total	$	355,595 93

The details are printed in the Auditor General's Report, under the proper heading.

In addition to the above the following summary shows the salaries and disbursements of Fishery officers in the several provinces, together with the expenses for maintenance of the different fish-breeding establishments throughout the Dominion:—

Fisheries,	Ontario	$	19,264 98
do	Quebec		12,991 63
do	Nova Scotia		20,201 09
do	New Brunswick		20,298 00
do	Prince Edward Island		3,746 69
do	British Columbia		4,333 63
do	Manitoba		2,848 16
	Total	$	83,684 18

Fish-breeding,	Newcastle	hatchery	$	6,122 62
do	Sandwich	do		3,784 70
do	Tadoussac	do		2,457 71
do	Gaspé	do		1,773 93
do	Magog	do		1,287 98
do	Ristigouche	do		4,709 10
do	Bedford	do		3,824 61
do	Sydney	do		2,864 14
do	Miramichi	do		1,929 17
do	St. John River	do		1,221 00
do	Dunk River	do		140 31
do	Fraser River	do		4,933 26
General account				6,266 59
	Total		$	41,215 12

This Expenditure in sub-divided as follows —

	$ cts.	$ cts.
Ontario.		
Salaries of officers	9,958 83	
Disbursements of officers	8,617 27	
Miscellaneous	688 88	
Total		19,264 98
Quebec.		
Salaries of officers	8,229 53	
Disbursements of officers	4,572 10	
Miscellaneous	190 00	
Total		12,991 63
Nova Scotia.		
Salaries of officers	14,537 19	
Disbursements of officers	5,352 28	
Miscellaneous	311 62	
Total		20,201 09
New Brunswick.		
Salaries of officers	12,805 31	
Disbursements of officers	7,339 41	
Miscellaneous	153 28	
Total		20,298 00
Prince Edward Island.		
Salaries of officers	3,110 08	
Disbursements of officers	636 61	
Total		3,746 69
British Columbia.		
Salaries of officers	3,039 50	
Disbursements of officers	1,198 76	
Miscellaneous	95 37	
Total		4,333 63
Manitoba.		
Salaries of officers	1,560 00	
Disbursements of officers	1,273 16	
Miscellaneous	15 00	
Total		2,848 16
Total by Provinces		83,684 18
MISCELLANEOUS.		
Legal and incidental expenses	1,220 31	
Canadian fisheries exhibits	1,150 20	
Expenditure in connection with the distribution of fishing bounty	7,136 96	
Victoria Hall (Hatchery)	1,404 71	
Total		10,912 18
Grand Total		94,596 36

FISH BREEDING.

Newcastle Hatchery.	$ cts.	$ cts.
Salaries	1,388 75	
Miscellaneous expenditure	4,733 87	
Total		6,122 62
Sandwich Hatchery.		
Salaries	849 96	
Miscellaneous expenditure	2,934 74	
Total		3,784
Tadoussac Hatchery.		
Salaries	984 00	
Miscellaneous expenditure	1,473 71	
Total		2,457 71
Gaspé Hatchery.		
Salaries	666 63	
Miscellaneous expenditure	1,107 30	
Total		1,773 93
Magog Hatchery.		
Salaries	600 00	
Miscellaneous expenditure	687 98	
Total		1,287 98
Ristigouche Hatchery.		
Salaries	960 00	
Miscellaneous expenditure	3,749 10	
Total		4,709 10
Bedford Hatchery.		
Salaries	1,300 00	
Miscellaneous expenditure	2,524 61	
Total		3,824 61
Sydney Hatchery.		
Salaries	860 00	
Miscellaneous expenditure	2,004 14	
Total		2,864 14
Miramichi Hatchery.		
Salaries	500 00	
Miscellaneous expenditure	1,429 17	
Total		1,929 17

FISH BREEDING—*Concluded.*

St. John River Hatchery.	$ cts.	$ cts.
Salaries	600 00	
Miscellaneous expenditure	621 00	
Total		1,221 00
Dunk River Hatchery.		
Salaries	99 99	
Miscellaneous expenditure	40 32	
Total		140 31
Fraser River Hatchery.		
Salaries	2,100 00	
Miscellaneous expenditure	2,833 26	
Total		4,933 26
General Account.		
Salaries	2,250 00	
Miscellaneous expenditure	4,016 59	
Total		6,266 59
Total, Fish Breeding		41,315 12

Note.—Dunk River Hatchery closed 30th September, 1888.

STATEMENT of Expenditure in connection with Fisheries Protection Service for the Year ended 31st December, 1889.

Service.	Amount.	Total.
Steamer "Acadia."	$ cts.	$ cts.
Wages of officers and men	7,349 92	
Provisions	2,466 99	
Coal	3,723 01	
Repairs to engines	655 00	
Miscellaneous expenditure	3,600 72	
		17,795 64
Steamer "La Canadienne."		
Wages of officers and men	7,283 81	
Provisions	2,941 08	
Coal	1,061 41	
Miscellaneous expenditure	4,747 74	
		16,034 04
Steamer "Stanley."		
Wages of officers and men	4,597 34	
Provisions	2,496 23	
Fuel	2,281 01	
Miscellaneous expenditure	1,397 10	
		10,771 68
Steamer "Cruiser."		
Wages of officers and men	1,815 32	
Provisions	468 24	
Fuel	514 82	
Repairs	1,719 54	
Miscellaneous expenditure	744 99	
		5,262 91
Steamer "Dream."		
Wages of officers and men	2,778 17	
Provisions	754 85	
Fuel	941 21	
Charter, 13⅓ months	4,000 00	
Miscellaneous expenditure	272 58	
		8,746 18
Schooner "Vigilant."		
Wages of officers and men	3,172 53	
Provisions	1,223 57	
Miscellaneous expenditure	964 77	
		5,360 87
Schooner "Critic."		
Wages of officers and men	1,946 38	
Provisions	687 97	
Charter	1,204 66	
Miscellaneous expenditure	353 00	
		4,192 01
Customs Steam Yacht "Argus," while employed on special services		128 91
General Account, Miscellaneous Expenditure		642 40
Fisheries Intelligence Bureau		110 62
Total		69,045 89

STATEMENT of Expenditure in connection with Fisheries Protection—*Concluded.*

Service.	Amount.	Total.
Recapitulation	$ cts.	$ cts.
Steamer "Acadia."	17,795 64	
do "La Canadienne."	16,034 04	
do "Stanley."	10,771 68	
do "Cruiser."	5,262 91	
do "Dream."	8,746 81	
Schooner "Vigilant."	5,360 87	
do "Critic."	4,192 01	
Steamer "Argus," special	128 91	
General Account	642 40	
Fisheries Intelligence Bureau	110 62	
Total		69,045 89
This amount will be reduced in the sum of $2,631.45 being the share of "Cruiser" expenses paid by Customs Department		2,631 45
Net expenditure, Fisheries Protection Service		66,414 44

RECEIPTS.

STATEMENT of Fisheries Revenue paid to the credit of the Receiver General of Canada, for the Fiscal Year ended 30th June, 1889.

	$ cts.	$ cts.
Ontario—		
Rents, license fees and fines	24,266 06	
Quebec—		
Rents, license fees and fines	3,390 79	
Nova Scotia—		
Fishery licenses and fines	2,744 23	
New Brunswick—		
Rent, fishery licenses and fines	8,642 88	
British Columbia—		
Rents, license fees and fines	6,416 00	
Manitoba—		
Fishery licenses and fines	848 00	
P. E. Island—		
Fishery license and fines	140 00	
		46,447 96
Proceeds of sale of speckled trout		352 50
		46,800 46
LESS—refund		360 00
Total		46,440 46

THE OYSTER FISHERY.

Its condition and restoration considered.

The consumption or demand for oysters in Canada is considerable, there being imported in the year 1888 as many as 1,698 barrels, 234,502 gallons shelled in bulk, and 198,543 pounds canned or preserved.

Only about $165,000 worth are annually produced in the Provinces of Nova Scotia, New Brunswick and Prince Edward Island, fully two-thirds of which are taken in the last named Province. It is claimed that, of all the oysters consumed in Canada less than one-third is supplied from native sources.

There is no sufficient reason why the demand for oysters throughout the Dominion should not be supplied by our own people. The inland markets are easily accessible, and the domestic consumption would, no doubt, be increased if the article was produced and supplied with our own resources, at a lessened cost. The area of oyster grounds on the Canadian coasts is very extensive, and is situated in localities admirably adapted for the growth and nutrition of oysters. This mollusk has been found from Bay des Chaleurs to Bay Verte, in the following places, viz.: between Caraquet Banks, at Caraquet, St. Simon, Shippegan Harbor and Gully, Tabusintac, Burnt Church, Bay du Vin, and many other places in Miramichi Bay; Kouchibouguac, Richibucto, Bouctouche, Cocagne, Shediac and Bay Verte. In Nova Scotia, the oyster is found at River Philip, Pugwash, Tatamagouche, River John, Pictou, Tracadie, Mabou, Margaree, Sydney, Albert Bridge, Country Harbor, St. Mary's River, Liscomb Harbor, Jeddore Head, and nearly everywhere in the Bras d'Or Lakes. It is found around the whole cost of the Island of Prince Edward, and many places in British Columbia are also adapted for the growth and cultivation of oysters.

In most of these places there are remnants of a stock which, for delicacy of flavor and nutritive properties, is not excelled by the choicest varieties grown and caught on the United States' coasts. Along the whole tidal shores of Prince Edward Island, and New Brunswick especially, oysters of the finest description might be raised in enormous quantities were the natural facilities for their culture enhanced by a proper system of cultivation and protection. When it is borne in mind that the mother oyster yields nearly 1,000,000 of spat each season, some slight conception may be formed of the probable return from any careful system of cultivation.

In 1880, this industry yielded in the States $13,403,852, eighty per cent. of which came from Chesapeake Bay. This high state of productiveness has been attained only by an economic use of existing oyster grounds, accompanied by careful and intelligent cultivation, after the areas of oyster shores had been apportioned among private individuals and regularly farmed. Similar results would be attained by like measures adapted to the oyster fishery on the shores of the Maritime Provinces.

In 1881, in France, 29,431 men, women and children were employed in taking 374,985,770 oysters from September to June, worth 12,061,753 francs, equal to $412,350.60. This was from public grounds alone, independent of private beds.

The strict observance of the decrees of 1852 in the conduct of the fisheries may be regarded as having contributed largely to the success of the oyster culture in France and to the actual prosperity of this industry. These decrees, the wisdom and opportuneness of which the event has demonstrated, were intended to stop the spoliation and exhaustion of the oyster beds, and subject their exportation to strict

regulations The persevering application of these measures, the care unceasingly renewed, the encouragement and the example which the Administration of the Marine continually gave, resulted in bringing about the restoration of the natural beds which were approaching exhaustion, and in invoking a revival of oyster culture by private individuals.

In England, in 1883, the value of oysters taken was nearly $10,000,000.00—£2,000,000.

Professor Huxley, Sir James Caid and Mr. Shaw Lefebvre reported to the English Government about the year 1863, calling attention to the falling off of the supply of oysters from the failure of spat. They recommended the acquisition by individuals or companies of sea-bottom for oyster culture.

Mr. Archibald Young, Inspector of Fisheries for Scotland, in a report on the oyster and mussel fisheries, remarks that: "Promiscuous and ill-regulated fishing on any bed or scalp to which oysters or mussels are attached simply means the extinction of these oysters or mussels in a longer or shorter space of time—especially, if no close season is observed, and if immature fish are carried away and sold, instead of being returned to the bed."

"The secret of the whole matter is that, where oyster and mussel cultivation has proved successful, the person undertaking the same has obtained a concession from the Government to work the beds exclusively himself, and has not been hampered by other persons claiming a right to fish on his grounds; in other words, fishings are worked in precisely the same way as farms on the land, where the farmer sows his seed, and at the proper season reaps his corn. The allowance of the general public to fish for oysters or mussels without restrictions or regulations means the inevitable destruction of the beds—some sooner, some later."

In view of the condition of our oyster beds, Prof. W. F. Ganong, a native of New Brunswick, at present a professor in the University of Harvard, says:—

"There are two futures open to the oyster industry of Acadia—free fishing by the people and a lingering death; or a vigorous Government interference and a great and lasting prosperity. This is the kernel of the whole matter—Government interference. It has worked well in other countries; it would, under the same conditions, work well in this. The duty of the Government, if it take charge of it, would be two-fold—to regulate the fishery on the public beds, and to give encouragement to culture by corporations and individuals."

"As to the first, the position and extent of the beds must be determined, and each one given a period of rest, being fished not oftener than once in three years; the close season should be vigorously enforced; fishermen should be made—under heavy penalties—to return to the water all oysters under a certain size; mud machines must be restricted to certain places in each district, being given ample liberty, but not allowed within a certain distance of any living bed; fishing through the ice should be regulated, so that refuse cannot be allowed to fall on the beds. As to the encouragement of culture, laws should be enacted which would give to a culturist as good a right to his product and as full protection from theft as has a farmer. Areas in good localities should be set aside and leased for long periods, but, as a rule, the public beds should not be trespassed upon.

"Some beds should always be reserved for public fishing. Freedom to take wild game under common sense conditions, the Dominion should be very slow to take from its citizens. Private individuals should be encouraged to take their seed oysters from our own beds, as there are none better nor so good for our climate."

During the course of an interesting debate which took place last Session in the Senate regarding the oyster fisheries of the Dominion, Senator Poirier brought the subject to the notice of the Senate, and especially alluded to the great destruction caused by winter fishing through the ice when small oysters and spat are destroyed in great num-

bers. Senator Macfarlane, whose great experience renders his views important, pointed out the hardship which the prevention of winter fishing would cause to many people. He, however, strongly advocated the restoration of exhausted beds by the Government.

A special Commission appointed in 1887 to investigate the condition of the oyster fishery in Canada, among several recommendations and suggestions as to the necessity for additional regulations to ensure the preservation and improvement of this important industry, shows that, upon personal examination of the oyster beds, they learned with surprise of the great extent of the area suitable for oyster culture in the Dominion. Many of the beds were found extinct, while others were rapidly becoming exhausted, from want of proper cultivation and protection from indiscriminate and improvident raking.

In France and in the British Isles, as well as in some parts of the United States, the oyster beds are divided into private and public fisheries, and a leasing or licensing system prevails.

It was the intention of Parliament, so long ago as 1868, to encourage in the same manner the development of this industry, as evinced by the provisions of 31 Vic., cap. 60.

By this Act, Parliament provides for the granting of licenses or leases for the exclusive right of fishing oyster beds in any of the bays, inlets, harbors, creeks, rivers, or between any of the islands of the coast of Canada.

POLLUTION OF STREAMS.

The habit of discharging the refuse from sawmills into public waters is a very serious evil, especially when it prevails on streams frequented by fish or on navigable waters, to the detriment of navigation. The milling interest being of such momentary importance to the country, it commands more attention than either the fishing privileges or right of navigation pertaining to the public. It is sometimes exceedingly difficult to deal with an enlarged industry of a lucrative and ramified character, when the object is either to promote, what may seem at the moment to be of secondary interest, or to insure public rights against some contingency more or less remote. Still, it is an undeniable fact that the damage caused to our fresh water fishing and navigation by polluting and obstructing the waters with refuse from sawmills and manufactories is increasing. Unless, therefore, speedy measures are taken to abate a nuisance which threatens serious permanent injury to the navigation and fisheries, private interests which are now profiting by a neglect of duty due to the public will possibly suffer most in the end, and be placed in antagonism to the public generally. The question of devising means to obviate such extensive injuries is simply one of expense. A moderate and judicious outlay, representing but a trifling percentage of the profits of mill-owners, would in most cases provide effectually against the injurious consequences of past and present neglect.

A very great deal of forbearance has been exercised towards mill-owners and manufacturers in years past. Many of them made repeated promises to devote some little attention towards remedying the evil; but, instead of doing so, they would seem to have rested securely in the belief that the tolerated practices of former years having become a sort of recognized privilege—excused, at least, if not

justified, by the importance and widespread benefits of manufacturing industries—were meant to be subjected merely to the formality of a periodical protest and abortive remonstrances. It is, therefore, very much to be regretted that men of such vast energy and practical resources did not earnestly consult or combine together with a view to mitigating, if not removing entirely, the evils of which the public so justly complains.

Pursuant to certain provisions of the statute 22 Vic., cap. 62, Consolidated Statutes of Canada, the following regulation was adopted on the 16th May, 1860:—

By-Law No. 9.—"Hereafter no slabs or edgings or other mill rubbish shall be sent adrift in any river or stream which may have been leased or reserved by the Crown for propagation, or where fish-ways have been erected."

Sub-sec. 2 of Sec. 18 of the Fisheries Act of 1865 (29 Vic., cap. 11), after providing against the throwing of lime or other poisonous substances into streams, goes on to say:—"And sawdust or mill rubbish shall not be drifted or thrown into any stream frequented by salmon, trout, pickerel or bass, under a penalty not exceeding one hundred dollars."

The statute 31 Vic., cap. 60, assented to on the 22nd May, 1868, contains the following provision regarding injuries to fishing grounds and pollution of rivers:—

"Lime, chemical substances or drugs, poisonous matter (liquid or solid), dead or decaying fish, or any other deleterious substance, shall not be drawn into or allowed to pass into, be left or remain in any water frequented by any of the kinds of fish mentioned in this Act; and sawdust or mill rubbish shall not be drifted or thrown into any stream frequented by fish, under a penalty not exceeding one hundred dollars."

On the 23rd May, 1873, the following Act was passed by Parliament:—

ANNO TRICESIMO-SEXTO.

VICTORIÆ REGINÆ.

CAP. LXV.

An Act for the better protection of Navigable Streams and Rivers.

(*Assented to* 23*rd May*, 1873.)

WHEREAS it is expedient to provide for the better protection of navigable streams and rivers: Therefore Her Majesty, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows:—

1. From and after the passing of this Act, no owner nor tenant of any saw-mill, nor any workmen therein, nor other person or persons whosoever, shall throw or cause to be thrown, or suffer or permit to be thrown, any sawdust, edgings, slabs, bark or rubbish of any description whatsoever, into any navigable stream or river, either above or below the point at which such stream or river ceases to be navigable.

2. Any person or persons violating the preceding section shall be liable, for the first offence, to a fine of not less than twenty dollars, and for the second, and each subsequent offence, to a fine of not less than fifty dollars, which fine shall be recoverable summarily in the same manner as provided for the recovery of the penalties by "*The Fisheries Act.*"

3. It shall be the duty of the several fishery officers to examine and report on the condition of the navigable streams and rivers under this Act from time to time, and to prosecute all parties contravening the terms of this Act; and such officers shall, for enforcing the provisions of this Act, have and exercise all the powers conferred upon them for like purposes by "*The Fisheries Act.*"

4. Provided always, that when it can be shown to the satisfaction of the Governor in Council that the public interest would not be injuriously affected thereby, the Governor in Council shall have power, from time to time, by Proclamation in the *Canada Gazette*, to declare any such stream or river, or part or parts thereof, exempted from the operation of this Act, in whole or in part, and shall also have power from time to time to revoke the same.

This was repealed on the 2nd June, 1886, by the Act 49 Vic., cap. 36, which reads as follows:—

7. No owner or tenant of any sawmill, or any workman therein or other person shall throw or cause to be thrown, or suffer or permit to be thrown, any sawdust, edgings, slabs, bark or rubbish of any description whatsoever, into any river, stream or other water any part of which is navigable, or which flows into any navigable water; and every person who violates the provisions of this section shall, on summary conviction, be liable, for a first offence, to a penalty of not less than twenty dollars, and for each subsequent offence to a penalty of not less than fifty dollars:

2. The several fishery officers shall, from time to time, examine and report on the condition of such rivers, streams and waters, and prosecute all persons violating the provisions of this section; and for enforcing the said provisions, such officers shall have and exercise all the powers conferred upon them for like purposes by "*The Fisheries Act:*"

3. The Governor in Council, when it is shown to his satisfaction that the public interest would not be injuriously affected thereby, may from time, by proclamation published in the *Canada Gazette*, declare any such river, stream or water, or part or parts thereof, exempted from the operation of this section, in whole or in part, and may, from time to time, revoke such proclamation.

The above provisions, relative to sawdust and mill rubbish, were subsequently incorporated in chapter 91, Revised Statutes of Canada, intituled: "An Act respecting the Protection of Navigable Rivers," and are now in forc

Under the above provisions, the following streams have, from time to time, been exempted from the operation of the statute as regards sawdust or mill rubbish:—

Crooked Creek, County of Albert, New Brunswick; Nashwaak River, New Brunswick; Beaver Creek, County of Waterloo, Province of Ontario.

That portion of the St. Francis River known as Brompton Falls, in the Province of Quebec.

The Ottawa River, between the Chaudière Falls and Mackay's Bay, and the Gatineau River, from the mill pond above Gilmour & Co.'s mill at Chelsea to its junction with the Ottawa at Gatineau Point.

The baneful effects of sawdust as one of the most destructive agents for polluting streams and otherwise causing injury to fish life has called forth the efforts of different countries to stay its progress. Wherever mill dams have been built across streams, and where sawdust, mill rubbish, and other deleterious substances have been thrown into the waters from sawmills and manufactories, fish-life and vegetation of all kinds have invariably been lessened and in many instances wholly destroyed. This is particularly noticeable among the higher orders of fishes, especially the salmon family, which are of a migratory nature, ascending rivers and streams for breeding purposes. These waters are invariably of the purest, coldest and most limpid description, and therefore best adapted for the propagation of their species. The salmon at the time of the first settlement of the Maritime Provinces was found frequenting almost every river and stream emptying into the sea. So plentiful were they in

many of the waters before the lumbering industry took such a strong hold in the erection of mill dams and saw-mills, with the consequent injurious effect upon fish-life, that salmon were in great abundance and freely used by the inhabitants generally for domestic purposes, and also produced a large amount of traffic and commercial wealth for the country. But as sawmills and mill dams increased in numbers, with greater capacity for their work, they formed impassable barriers to the ascent of salmon and other fishes to their natural spawning grounds above, and then the hurtful and pernicious effects from the sawdust and mill rubbish being constantly cast into the streams, poisoned the spawning beds below, and stayed the growth of all vegetation in the streams, thus driving away insect life, which is the principal sustenance for fish in their younger stages of existence.

As this improvident work of the mills increased in magnitude, so did the yield of all kinds of fish decrease in the streams, until it had been found in some cases that, after stripping the neighborhood of all lumbering material and destroying all fish-life, these mills have gone into ruin and decay.

By a strict and impartial application of the law for regulating mill dams, for the easy ascent of salmon, shad and alewives to their proper spawning grounds; by the enforcement of the statutes forbidding the drifting or throwing of sawdust, mill rubbish and other deleterious substances into the rivers; by the due observance of proper close seasons; by a stoppage of the use of the deadly torch and spear; by the judicious enforcement of regulations regarding the use and setting of nets of all kinds, and by increasing the supplementary aid to be derived from artificial fish culture, it is believed that only a few years would pass before the increase in the yield of salmon, shad, alewives and other fishes would be noticed in the whole extent of the waters of the Dominion. There are yet to be found sufficient numbers of these fish, natives of the rivers, left, from which, by proper protection and good husbandry, an immense supply of fish food and commercial wealth could be readily obtained for the general benefit of the inhabitants of the Dominion of Canada.

The question of navigation is also of paramount importance, the gradual accumulation of sawdust having already proved very detrimental in several cases.

All authorities agree upon these points, that the surest mode of effecting permanency of the fisheries is to preserve the natural condition of the spawning beds; to allow the fish free access thereto, and to prevent their molestation while engaged in reproducing their species. None of these conditions can be carried out if the waters are polluted.

In 1872 the Government appointed a Commission to enquire into the condition of navigable streams, and the injurious effects of sawdust therein. The labors of this Commission were, however, limited to a few rivers in the Provinces of Ontario and Quebec.

After recommending the introduction of a Bill to prohibit the throwing in the water of every kind of refuse, except sawdust; that no opening be allowed in the floors or walls of mills, unless covered with gratings, and the appointment of some officer whose special duty it would be to see that the provisions of this Act were strictly carried out, the report concluded as follows:—

"After all descriptions of sawmill waste, except sawdust, have been prevented by the Act from being thrown into any lake, river or stream whatever, should it be proved to the satisfaction of the Government that the continued discharge of pure

sawdust does, and will, impair the navigation, or create impediments thereto in any manner, the Government shall have the power in such case to exclude it, in the same manner as provided against the deposit of other refuse. Six months' notice thereof to be given to the mill proprietors."

A Select Committee appointed by order of the Senate "to enquire and report upon the extent and effect upon the Ottawa River of the deposit therein of sawdust and other refuse," submitted the result of its labors in a report dated 15th May, 1888, concluding with the following recommendations :—

"Your Committee desire to acknowledge the readiness with which information was furnished them by the various mill-owners and manufacturers of sawn lumber who appeared before them, and whose interests were ably represented by counsel, as well as the valuable information afforded by all other witnesses.

"Your Committee are of opinion that it is established beyond question that extensive deposits of sawdust and other mill refuse exist in the Ottawa River, from the Chaudière Falls to the head of the Grenville Canal, and that these constitute a very serious and steadily increasing interference with public rights of navigation, which has already become seriously obstructed, and must, at no distant period, if immediate measures are not taken to arrest the evil, become irretrievably destroyed. These deposits also prevent the utilization of property along the banks of the river for the construction of wharves and for other similar purposes, and likewise cause further damage to riparian proprietors by the depreciation in value of property on the river front.

"Your Committee find, from the evidence given before them, that sawdust and other refuse of sawmills can be economically utilized, and that the destruction thereof is successfully accomplished in at least one sawmill upon the Ottawa River, and in many others in Canada and in the United States of America.

"Your Committee are also of opinion that these large deposits of decaying vegetable matter constitute at times a dangerous menace, if not a positive injury to health.

"Your Committee accordingly recommend that the proclamation, made on the 17th April, 1885, by which that portion of the Ottawa River lying between the Chaudière Falls and McKay's Bay, and also all that part of the Gatineau River from the mill pond above Gilmour & Company's mill at Chelsea to the mouth of the said Gatineau River, are exempted, so far as regards sawdust only, from the operation of the seventh section of the 'Act respecting the protection of Navigable Waters' (R.S.C., chap. 91), be rescinded by the Government as soon as practicable, having regard to the large and important interests involved in a business of such extent and public importance as is the lumber trade, and that thereafter the provisions of the said section should, in the public interest, be strictly enforced."

The enforcement of the statutory enactments respecting sawdust and mill rubbish means but a relatively insignificant expenditure during the time the mills may be in operation; while, to the community at large, it means, coupled with other regulations, the permanency of valuable fishing interests long after the mills have ceased to run, and for these reasons it was considered advisable to strictly enforce the law in certain cases.

One of such cases brought most urgently to the notice of this Department was that of the Otonabee River, a stream of considerable magnitude, which takes its rise in a chain of lakes back of Peterborough, and after a tortuous course enters Rice Lake, where it changes its name to the Trent, and runs into the Bay of Quinté at Trenton.

As early as 1879, representations were made by municipal bodies, members of Parliament and influential residents, urging a strict enforcement of the statute on this stream, in view of the danger to navigation and the preservation of public health.

In 1886, these representations were followed by strong remonstrances from medical practitioners, the Provincial Board of Health, inhabitants of Peterborough and Ashburnham. The Messrs. Gilmour & Co., mill owners at Trenton, complained that, large deposits of sawdust at the mouth of the Otonabee, where it joins Rice Lake, impeded navigation and the driving of their logs.

Overseer Chas. Gilchrist, of Rice Lake, reported that, in the spring of 1886, water being then very high in Otonabee River, in fact higher than for ten years past, and the current so swift as to make that stream a perfect torrent, he noticed, on several occasions, old sawdust which had been deposited on drowned lands for years, forced into the river again. In several places where the depth of water was 8 or 10 feet it is now only 3 or 5 inches, and a skiff can with difficulty go over them. Steamboats used to ascend the east branch, but this is now closed, owing to the immense deposits of sawdust. Great apprehensions are entertained that the west branch will also become choked up.

An understanding was then arrived arrived at between this Department and the mill owners, by which the latter undertook to keep all their refuse out of the water, except what fell through the pitman holes.

In 1888, the Corporation of the city of Peterborough and others, represented that, the conditions of the above agreement were imperfectly complied with, and in some cases deliberately violated. The mill owners were accordingly notified, but denied the impeachment. The local fishery officer having reported in 1889 that the law was constantly ignored, he was instructed to prosecute. Upon this, the mill owners made strong representations, urging that they had done all that they possibly could towards keeping the terms of the agreement, and eventually sent a deputation to Ottawa to urge their claims to special consideration.

Mr. S. Wilmot, of this Department, was thereupon instructed to proceed to Peterborough and carefully enquire into all statements and counter statements by personally inspecting the mills.

The result of his investigations shows that :

1. The Otonabee River is fast filling up, and the navigation becoming impeded by deposits of sawdust.

2. Fish-life is seriously affected thereby.

3. The agreement made in 1886 with the Fisheries Department was not complied with.

4. It would be unadvisable to remit the fines imposed for violations of the law.

5. It is quite possible to arrange these mills, by means of comparatively inexpensive appliances, so as to almost entirely prevent the escape of sawdust through the pitman holes.

6. To exempt these mills from the operation of the statute as regards sawdust only, would be tantamount to exempting them from the operation of the statute altogether.

7. Through the exercise of a small amount of ingenuity and the application of comparatively inexpensive machinery, sawdust could easily be disposed of otherwise than by letting it fall into the water.

Prosecutions were then instituted day by day, and heavy fines imposed, which are now in course of collection.

A special report by Mr. Wilmot on sawdust in Otonabee River forms Appendix II to this report.

THE STAFF.

The following changes in, and appointments to the outside staff of the Department have been made during the year.

The Inspector of Fisheries for Prince Edward Island was superannuated on the 13th July 1888, on an allowance of $200 per annum, and Mr. Edward Hackett, of Tignish, P. E. Island, appointed to the Inspectorship of that Province.

The office of Inspector of Fisheries for Nova Scotia was, by Order in Council, abolished, and the Province, for the better administration of the fishery laws and regulations, divided into three districts. The late Inspector was superannuated from 1st July 1889, on an allowance of $756; per annum, and appointments as inspectors made to the new districts as follows:—

No. 1 District.—A. C. Bertram, North Sydney, re-appointed, comprising the Island of Cape Breton.

No. 2 District.—Robert Hockin, Pictou, comprising the Counties of Cumberland, Colchester, Pictou, Antigonish, Guysboro', Halifax and Hants.

No. 3 District.—J. R. Kinney, Yarmouth, comprising the Counties of Lunenburg, Queen's, Shelburne, Yarmouth, Digby. Annapolis and King's.

The office of Inspector for New Brunswick was also abolished by Order in Council, and the services of the Inspector dispensed with. As in the case of Nova Scotia, the Province was divided into three districts and Inspectors appointed thereto as follows:—

No. 1 District.—Capt. J. H. Pratt, St. Andrews, comprising the County of Charlotte, including the Islands of Campobello and Grand Manan, and the fisheries of Passamaquoddy Bay.

No. 2 District.—Robert A. Chapman, Moncton, comprising the Counties of Restigouche, Gloucester, Northumberland, Kent and Westmoreland.

No. 3 District.—David Morrow, Oromocto, comprising the Counties of Albert, St. John, King's, Queen's, Sunbury, York, Carleton and Victoria.

The following changes occurred in the Province of Ontario:—

Mr. Joseph Boismier, of Sandwich, was appointed Fishery Overseer on 1st September, 1889, to replace his late father, Ed. Boismier.

Mr. David Girardin, of Pelee Island, was appointed Fishery Overseer, 1st July, 1889, in place of James Cummins, retired from service.

Upon the resignation of Mr. Donald Cameron, of Sault Ste. Marie, his salary and district were divided between Messrs. John Marks, of St. Joseph's Island, and Alex. Brinkman, of Manitowaning.

The large district rendered vacant by the death of Overseer J. W. Kerr in May, 1888, and the salary attached thereto, was, during the past year, divided between Messrs. Fred Kerr, of Hamilton, and Wm. Sargent, of Bronte. A small portion thereof was also added to the district of Overseer G. B. McDermot, of Port Perry.

Mr. J. C. Pollock, of Forest, was appointed Fishery Overseer at River St. Clair and Lake Huron, to replace Mr. David McMaster.

On the resignation of Overseer, J. A. Couse, on Lake Huron, Mr. H. B. Quarry, of Parkhill, was appointed in his place, 1st July, 1889.

An additional Fishery Overseer, H. W. Ball, of Goderich, was appointed for a portion of Lake Huron, 9th September, 1889.

Mr. John Hoar, Light House Keeper at Christian Island, Lake Huron, was appointed a Fishery Overseer 14th November, 1889.

Mr. Jas. McFadden, of Carleton Place, Fishery Overseer for Mississippi Lake and River, having resigned, was replaced by Mr. Alexander Wilson, 1st November, 1889.

And in the Province of Quebec, the following :—

Mr. Philip Vibert, late Fishery Overseer, at Gaspé Basin, died in June last. Vacancy not yet filled.

The services of Overseer J. Bilodeau, for Lake St. John, were dispensed with.

On the death of Overseer James Mohr, Pontiac County, his son, Edwin Mohr, was appointed in his place, 23rd May, 1889.

The services of Mr. Joseph Desaulniers, Fishery Overseer for St. Maurice and Maskinonge Counties, were dispensed with 31st December, 1888.

Mr. J. L. Martel, Overseer for County Joliette, was dispensed with 28th January, 1889.

The services of Mr. J. B. Saucier, Fishery Overseer at Matane, were discontinued for greater efficiency, and he was replaced by Mr. Johnny Joncas, 18th October, 1889.

The services of Fishery Overseer Odilon Lacoursière, County Champlain, were dispensed with in December, 1888.

Overseer J. W. Hanson, of Berthier, resigned 8th July, 1889. District merged in that of Overseer S. A. Grant.

The services of Overseer John Cullen, of Paspebiac, were dispensed with, and his salary and district divided between two new officers, Messrs. Pierre Cyr, of Nouvelle, and John Smith, of New Carlisle, 1st June, 1889.

Mr. George Boisvert, of Becancour, was appointed a Fishery Overseer for the district of Nicolet, on the St. Lawrence River, 1st September, 1889.

In addition to the changes already noted in the Inspectorship of the Province of Nova Scotia, the following have taken place among the subordinate officers :—

Warden H. M. Fulton died, Colchester County, 12th January, 1889.

Mr. Patrick Taggart was appointed a Fishery Warden in Cumberland County, 1st November, 1888.

The services of Warden A. L. Gavil, Pictou County. dispensed with, April, 1889, and Charles T. Potter appointed in his place.

Mr. Wm. Munro was appointed a Fishery Warden at Cole Harbour River, Guysboro' County, 1st January, 1889, in place of James Harrigan, jr., deceased.

Mr. Geo. Sears was appointed, 1st January, 1889, a Fishery Warden at West River, St. Mary's, Guysboro County, to replace D. A. McDonald, previously dispensed with.

Mr. J. L. Smith, Warden at West River, Guysboro' County, having removed from the locality, was replaced by J. P. Smith.

Fishery Overseer T. B. O'Brien, for the Eastern Division of Hants County, died in August, 1888, and his salary and district were divided between two officers, Messrs. Wm. B. Smith, of Maitland, and John Snide, of Shubenacadie, 10th April, 1889.

Warden Daniel McDermot, Inverness County, removed same date.

Mr. Lewis A. Murphy was appointed Fishery Warden for Gaspereaux River, 10th April, 1889, to replace Joseph Angus, deceased.

Mr. H. S. Jost, Fishery Overseer for the Western Division of Lunenburg County, died in April, 1889, and was replaced by Mr. W. M. Solomon.

Mr. Nicholas Schmeisser was appointed Fishery Warden on Lahave River, County Lunenburg, 1st May, 1889, in place of Charles Pernette, deceased.

Warden John Andrews, of Mushamush River, was dispensed with 11th July, 1889.

Mr. James Davis, Warden of East River, County Lunenburg, removed from the locality, and was replaced by Michael Keating.

Mr. Duncan G. McDonald, Fishery Overseer Eastern Division Pictou County, died 30th November, 1889,

Fishery Warden William Kehoe, of River Bourgeoise, County Richmond, died July, 1889.

The services of Warden M. Greenwood, of Clyde River, County Shelburne, were dispensed with, and he was replaced by William McLean and Lewis McKinnon, 23rd May, 1889.

Overseer Donald McRae, of Baddeck, Victoria County, was retired from the service, and Fishery Warden Donald McQuarrie promoted to his place, 1st October, 1889.

Mr. Duncan McDonald was appointed Fishery Overseer at Aspy Bay, County Victoria, in place of Malcolm McIntosh, dispensed with, 26th October, 1889.

The services of Warden Thomas Donovan, of Victoria County, were dispensed with, 16th November, 1889.

Mr. George H. Robertson, Fishery Overseer at Yarmouth, resigned in June, 1889.

And the following additional changes occurred in the Province of New Brunswick :—

Mr. Wm. Robichaud, Fishery Overseer in Gloucester County, having removed from the locality, was replaced by Mr. William Walsh, 1st July, 1889.

Mr. Valentine Gibbs, of Pokemouche, was appointed a Fishery Warden to replace Mr. James Walsh, dispensed with.

Mr. S. F. Ryan, Fishery Warden of Mill Stream, King's County, died, and was replaced by Edwin Fenwick, 1st January, 1889,

Fishery Overseer John Stymeist, of Northumberland County, was dispensed with, and replaced by John Robertson, 1st November, 1889.

The services of Overseer Murdock Sutherland, of Northumberland County, were dispensed with, 14th September 1889.

On the resignation of Warden J. C. McCluskey, Victoria County, Daniel Lortie was appointed in his place.

Among the Wardens of P. E. Island the following changes took place:—

Mr. Charles W. McDonald, appointed for Blooming Ponds, in Queen's County, June, 1889.

Mr. Stanislaus P. Arseneault, appointed fishery Warden at Egmont Bay, County Prince, August, 1889, to replace J. A. Arseneault, dispensed with.

A detailed list of Fishery officers forms appendix No. 1 to this report.

RE-ORGANIZATION.

It has been ascertained that in many cases fishery wardens whose pay is little more than nominal, do not, at busy seasons of the year, give that attention required to properly guard the fisheries. To remedy this it may be advisable to change the system, and instead of appointing permanent wardens with wholly inadequate pay, to hire patrol men at a per diem allowance for such periods during the year as their services are necessary; these men should be obliged to furnish a diary showing each day's work and should act under the immediate supervision of the inspector of fisheries or overseer for the district in which they may be employed.

This change, if generally adopted, will necessitate an increased appropriation, but the benefits derivable therefrom are very apparent in the few districts in which the system has already been put in force.

The license system has been extended to the North-West Territories, additional guardians have been appointed and it is proposed, to such an extent as may be considered practicable, to secure the co-operation of the mounted police and Indian agents in the protection of the fisheries.

In the Province of British Columbia a re-arrangement of the fishery districts is contemplated, special guardians being named for the different districts.

Summary of work performed in the Department of Fisheries during the year 1889:

7,090 letters and communications received.
5,775 letters written, covering 5,709 pages.
195 reports to Council, covering 364 pages.
2,888 circulars to outside officers.
2,350 special statements and memoranda prepared.
4,085 licenses issued by Department.
1,272 receipts issued (918); Departmental requisitions (236); contingencies certificates (118).
4,850 cheques issued for salaries and disbursements in connection with the fisheries service.
36,900 cheques issued in payment of fishing bounties.
16,400 claims for fishing bounty examined, entered and paid.
Preparing, compiling and revising issue of annual report, 368 pages of print.

I have the honor to be, Sir,

Your obedient servant,

JOHN TILTON,
Deputy Minister of Fisheries.

PART I.

APPENDICES.

APPENDIX No. 1.

SCHEDULE of Fishery Officers in the Dominion of Canada for the Year 1889.

PROVINCE OF ONTARIO.

Name.	Rank.	P. O. Address.	Extent of Jurisdiction.
W. C. Dobie	Overseer	Port Arthur	About 270 miles of the waters along the north shore of Lake Superior, extending from Pigeon River to Slate Island.
Joseph Wilson	do	Sault Ste. Marie	About 280 miles of the waters along the north coast of Lake Superior, from Slate Island to Sault Ste. Marie and about 186 miles north channel Georgian Bay to Collins' Inlet.
John Marks	do	Marksville	About 200 miles of the waters around the shores of Manitoulin, St. Joseph's, Cockburn and other islands in Georgian Bay.
Alex. Brinkman	do	Manitowaning	About 230 miles of the shores of Manitoulin, Club, Lonely, Squaw and other islands in Lake Huron and Georgian Bay.
F. G. M. Fraser	do	Victoria Harbor	About 150 miles of the coast of Georgian Bay, extending from Collins' Inlet to Victoria Harbor.
Samuel Frazer	do	Midland	About 140 miles of the waters of Georgian Bay from Victoria Harbor, Allenwood, including Christian, Hope, Beckwith Grants and Tomb Islands.
John Hoar	do	Lafontaine	About 18 miles of the waters of Georgian Bay around Christian Island.
George S. Miller	do	Owen Sound	About 110 miles of the Georgian Bay from Allenwood to Colpoy's Bay.
John Shackelton	do	Oxenden	About 90 miles of the waters of Georgian Bay from Colpoy's Bay to Cape Hurd. Beside the inland waters of the Townships of Albermarle, Estnor, Lindsay and St. Edmunds, Co. Bruce; comprised within an area of 600 square miles.
R. H. Murray	do	Allenford	About 70 miles of the waters of Lake Huron from Cape Hurd to Southampton, beside the inland waters of the County of Bruce, south of division line between Amable and Albermarle, comprised within an area of about 800 square miles.
H. W. Ball	do	Goderich	About 60 miles of the waters of Lake Huron, from Southampton to Goderich.
H. B. Quarry	do	Parkhill	About 65 miles of the waters of Lake Huron, extending from Goderich to Blue Point.
J. C. Pollock	do	Forest	About 45 miles of the waters of Lake Huron and St. Clair River, extending from Blue Point, on Lake Huron, to Baby's Point in River St. Clair.
C. W. Raymond	do	Mitchell's Bay	About 30 miles of the waters of Lake St. Clair, from Little Lake to its head.
A. Quenneville	Warden	Stony Point	About 10 miles of the waters of Lake St. Clair, from division line between Dover, East and West, to Stony Point.
Joseph Boismier	Overseer	Sandwich	About 20 miles of the waters of Lake St. Clair, from Stony Point to Detroit River.
Wm. Prosser	do	Leamington	About 50 miles of the waters of Lake Erie, from the mouth of Detroit River to Point Pelee.
David Girardin	do	Point Pelee	About 50 miles of the waters of Lake Erie, around Point Pelee Island and adjacent islands.
Horace Bartlett	Warden	North Harbor Island.	About 20 miles of the waters of Lake Erie, around North Harbor and Middle Sister Islands.

SCHEDULE of Fishery Officers, &c.—*Continued.*

PROVINCE OF ONTARIO—*Continued*

Name.	Rank.	P. O. Address.	Extent of Jurisdiction.
John McMichael	Overseer	Blenheim	About 110 miles of the waters of Lake Erie, fronting on the Counties of Kent and Elgin.
David Sharp	do	Port Ryerse	About 70 miles of the waters of Lake Erie, fronting on the Counties of Norfolk and part of Haldimand as far as South Cayuga.
W. A. McRae	do	Dunnville	About 10 miles of the waters of Lake Erie, from Cayuga to Moulton Bay and Grand River (30 miles), from mouth to Caledonia.
Peter Price	do	St. Williams	About 30 miles of the waters of Lake Erie, around Long Point Island.
Fred. Kerr	do	Hamilton	About 50 miles of the waters of Lake Ontario, from Brant House, Burlington Beach, to Niagara, including the Niagara River, 50 miles ; in all, 100 miles.
Wm. Sargent	do	Bronte	About 20 miles of the waters of Lake Ontario, extending from Port Credit to Burlington Beach, at Brant House.
Wm. Helliwell	do	Highland Creek	About 26 miles of the waters of Lake Ontario fronting on the County of York.
Chas. Gilchrist	do	Port Hope	About 40 miles of the waters of Lake Ontario fronting on the County of Northumberland. Together with Rice Lake and tributaries about 60 square miles of water.
Chas. Wilkins	do	Belleville	Bay of Quinté, comprising about 80 miles of coast line of Counties of Prince Edward and Hastings.
Joseph Redmond	do	Picton	About 90 miles of the waters of Lake Ontario fronting on the County of Prince Edward.
A. D. Sills	do	Napanee	About 35 miles of the waters of Lake Ontario fronting on the Counties of Lennox and Addington, and upper part of Amherst Island ; also the inland waters of the Counties of Lennox and Addington, comprised within an area of about 1,600 square miles.
R. R. Finkle	do	Bath	About 25 miles of the waters of Lake Ontario fronting on the Township of Earnestown in the Counties of Lennox and Addington, and the lower part of Amherst Island.
Peter Kiel	do	Wolfe Island	About 60 miles of the waters of Lake Ontario around Wolfe, Simcoe, Horseshoe and Pigeon Islands.
Thomas Merritt	do	Kingston	About 20 miles of the waters of Lake Ontario fronting on the Township of Pittsburgh and Kingston, County Frontenac, including part of Bay Quinté and River St. Lawrence.
John Cox	Overseer	Howe Island	About 16 miles of the waters of Lake Ontario and River St. Lawrence, around Howe Island.
Nassau Acton	do	Gananoque	About 6 miles of the waters of the River St. Lawrence, from Howe Island to Jack Straw Lighthouse, together with the waters around Admirality group of Islands ; also, Gananoque River, comprising 10 miles inland waters.
J. G. Wallace	Warden	Ivy Lea	About 10 miles of the waters of the River St. Lawrence, extending from Jack Straw Lighthouse to Rockport, including the islands therein.
Henry Hunt	do	Rockport	About — miles of the waters of River St. Lawrence around LaRue's Island.
John H. Davis	do	Gananoque	About — miles of the waters of the River St. Lawrence, extending from Sheriff's Point to head of Grenadier Island.
Wm. Pool	Overseer	Rockport	About 32 miles of the waters of the River St. Lawrence, extending from Rockport to Prescott.
Sydney Pattison	Warden	do	About 32 miles of the waters of the River St. Lawrence from Gananoque to Brockville.

SCHEDULE of Fishery Officers, &c.—*Continued.*

PROVINCE OF ONTARIO—*Continued.*

Name.	Rank.	P. O. Address.	Extent of Jurisdiction.
John Mooney	Overseer	Maitland	About 60 miles of the waters of the River St. Lawrence from Brockville to Cornwall.
Robt. P. Boyd	do	Lyn	About 6 miles of the waters of the River St. Lawrence, extending 3 miles above and 3 miles below Cole's Shoal Lighthouse.
T. McGarity	Overseer	Cornwall	About 40 miles of the waters of the River St. Lawrence, fronting on the Counties of Stormont and Glengarry.
Pierre St. Pierre	do	Point Fortune	About 40 miles of the waters of the Ottawa River extending from Point Fortune to Wendover, in the County of Prescott.
Olivier Miron	do	Alfred	The waters of the South Nation River, County of Prescott, comprising about 50 miles of inland waters.
W. W. Boucher	do	South March	About 60 miles of the waters of the Ottawa River fronting on the Counties of Russell and Carleton.
John Grant	do	Forester's Falls	About 55 miles of the Ottawa River fronting on the County of Renfrew from the foot of Upper Allumette Lake to Des Joachims, together with about 75 miles of inland waters, comprising Petawawa River and tributaries.
Archibald Acheson	do	Westmeath	About 25 miles of the Ottawa River, comprising LowerAllumette and Coulonge Lakes.
J. S. Richardson	do	Sturgeon Falls	The waters of Lake Nipissing, comprising about 160 miles, together with the Mattawa River, about 36 miles, and French River and tributaries, about 100 miles of inland waters.
E. C. Roper	do	Bracebridge	Inland waters of the Townships of Watt, Stephenson, Brunnel, Franklin, Monk, McAulay, McLean, Ridout, Muskoka, Draper, Oakley, Morrison and Ryde, in the District of Muskoka, comprised within an area of about 1,000 square miles.
Geo. R. Steele	do	Lorimer Lake	The inland waters of the Townships of Cowper, Foley, Christie, McDougall, McKeller, Ferguson, Carling, Shawanaga, Burpee, Hagerman, Brown and Wilson, in the Districts of Muskoka and Parry Sound, comprised within an area of about 1,000 square miles.
J. G. Rumsey	do	Huntsville	The inland waters of the Townships of Chaffey, Cardwell, Stisted, Sinclair, Bethune, Montieth, McMurrich, Perry, Spence, Ryerson, Armour and Proudfoot, in the Districts of Muskoka and Parry Sound. comprised within an area of about 1,000 square miles.
Wm. Lockhart	do	Denville	The inland waters of the Townships of Croft, Chapman, Strong, Jolly, Ferries, Lount, Machar, Laurier Mills, Pringle, Gurd and Himsworth, in the Districts of Muskoka and Parry Sound, comprised within an area of about 1,000 square miles.
L. S. Sanders	do	Barrie	About 110 miles of the waters of the north shore of Lake Simcoe and its tributaries, Couchiching and Holland Rivers.
Wm. Hastings	do	Roach's Point	About 30 miles of the waters of the South Shore of Lake Simcoe from Cook's Bay to Beaverton.
Fred. Webber	do	Orillia	About 40 miles of the waters of Lake Couchiching and Severn River in the County of Simcoe.
Wm. McDermot	do	Beeton	The inland waters of the South Riding of the County of Simcoe, comprised within an area of about 900 square miles.
H. McFayden	Overseer	Durham	The head waters of Saugeen River and tributaries, comprising an area of about 1,000 square miles.

SCHEDULE of Fishery Officers, &c.—*Continued.*

PROVINCE OF ONTARIO—*Continued.*

Name.	Rank.	P. O. Address.	Extent of Jurisdiction.
Patrick McCarron	do	Wallaceburg	The waters of Sydenham River and tributaries, comprising about 65 miles.
J. B. Moody	do	Waubuno	The north branch of Sydenham River, from junction with main river to its sources, comprising about 20 miles.
Peter McCann	do	London	About 65 miles of the River Thames, from Wardsville to London.
John Crotty	do	Bothwell	About 25 miles of the River Thames, extending from Wardsville to Lewisville.
Timothy McQueen	do	Chatham	About 25 miles of the River Thames, from Lewisville to its mouth.
W. P. Croome	do	Brantford	About 150 miles of the waters of the Grand River and its tributaries, from Brantford upward.
W. B. Jelly	do	Bowling Green	The inland waters of the North Riding of the County of Wellington, comprised within an area of about 600 square miles.
Andrew Hughson	do	Orangeville	About 25 miles of the waters of River Credit, extending from Orangeville to Norval; together with the inland waters of the Townships of Mono, East Garafraxa, Amaranth, Albion and Luther, comprised within an area of about 500 square miles.
Robert Stewart	Overseer	Claude	The inland waters of the County of Cardwell, comprised within an area of about 400 square miles.
Wellington Hull	do	Erin	The inland waters of the Townships of Eramosa, Erin, Caledon and Esquessing, comprised within an area of about 400 square miles.
Alex. Blakely	do	Port Credit	About 1½ miles of the waters of the River Credit —from Norval to its mouth, in the County Peel.
Nelson Simmons	do	Meyersburg	The waters of Trent River, in the Counties of Northumberland and Hastings, comprising about 80 miles.
J. R. Graham	do	Fenelon Falls	The inland waters of the North Riding of the County of Victoria, lying north of Fenelon Falls, and comprised within an area of about 800 square miles.
G. B. McDermot	do	Port Perry	About 22 miles of the waters of Lake Ontario, fronting on the County of Ontario, together with Lake Scugog, including Lindsay and Scugog Rivers, in the Counties of Durham, Victoria and Ontario, about 50 miles.
George Cochrane	do	Lakefield	The waters of Pigeon, Deer, Salmon Trout, Stony, Sturgeon and Chemong Lakes, in the County of Peterboro', comprised within an area of about 500 square miles.
.....	.....	.....	The waters of Gull and Burnt Rivers and tributaries, together with Drag, Eagle, Moose, Redstone, Crooked and other lakes, lying within the East Riding of the County of Peterboro', and comprised within an area of about 400 square miles.
B. H. Sweet	Overseer	Bancroft	The inland waters of the Townships of Wollaston, Limerick, Cashel, Farraday, Dungannon, Mayo, Herschel, Monteagle, Carlow, McClure, Wicklow, Bangor, in the County of Hastings, and comprised within an area of about 1,000 square miles.
H. R. Purcell	do	Colebrook	The inland waters of the Townships of Camden, Portland, Loughboro', Sheffield and Kennebec, in the Counties of Addington and Frontenac, comprised within an area of about 500 square miles.

SCHEDULE of Fishery Officers, &c.—*Continued.*

PROVINCE OF ONTARIO—*Concluded.*

Name.	Rank.	P. O. Address.	Extent of Jurisdiction.
Robt. Gilbert	do	Ompah	The inland waters of the Townships of Palmerston, Clarendon, North Canonto, South Canonto and Miller, in the County of Frontenac, and comprised within an area of about 500 square miles.
George Lake	do	Tichbourne	The inland waters of the Townships of Bedford, Hinchinbrooke, Olden and Oso, in the County of Frontenac, and comprised within an area of about 400 square miles.
W. H. Johnston	do	Farmersville	The waters of Charleston Lake and Gananoque Lake and River, in the County of Leeds, comprising about 50 miles.
James Greer	Overseer	Warburton	The inland waters of the Townships of Leeds and Lansdowne in the County of Leeds, and comprised within an area of about 200 square miles.
Wm. Hicks	do	Athens	The waters of Upper and Lower Beverley Lakes, in the County of Leeds, comprising about 40 miles.
Geo. Jeacle	do	Westport	The waters of Rideau, Upper Rideau, Openicon, Otty, and neighboring lakes, in the County of Leeds, comprised within an area of about 200 square miles.
A. E. Mills	do	Smith's Falls	About 20 miles of the waters of Rideau River and Canal from Poonamalee Locks to Burritt's Rapids.
John Murphy	do	Perth	The inland waters of the South Riding of the County of Lanark from the narrows between Upper and Lower Rideau Lakes to Smith's Falls, comprising about 25 miles.
Eph. Deacon	do	Bolingbroke	The waters of River Tay and tributaries and Fall Bay River, in the County of Lanark comprising about 35 miles.
Alexander Wilson	do	Carleton Place	About 60 miles of the waters of Mississippi River and Lake in the County of Lanark.
Guy Read	do	Ottawa	Rideau River and tributaries from Ottawa to Burrett's Rapids, including Jock River, in the County of Carleton, comprising 55 miles.
A. Telfer	do	Braeside	The waters of Bonnechère River and lakes in the County of Renfrew, comprising about 45 miles.
M. L. Russell	do	Renfrew	The waters of Bonnechère River and tributaries in the County of Renfrew, comprising about 50 miles.
Hugh Gallagher	do	Sebastopol	The inland waters of Townships Sebastapol, Radcliffe, Lyndoch and Gratton in the County of Renfrew, comprised within an area of about 400 square miles.
Thomas McKibbon	do	Eganville	The waters of Mink and Doré Lakes in the County of Renfrew, comprised within an area of about 100 square miles.
Geo. Douglas	do	Snake River	The waters of Muskrat Lake and Snake River in the County of Renfrew, comprising about 25 miles.
Joseph Bélanger	do	High Falls	The waters of Calabogie Lake and the inland waters of the Township of Bagot, County of Renfrew, comprised within an area of about 100 square miles.

SCHEDULE of Fishery Officers, &c.—*Continued.*

PROVINCE OF QUEBEC—TIDAL DIVISIONS—SOUTH SHORE.

Name.	Rank.	P. O. Address.	Extent of Jurisdiction.
Wm. Wakeham.....	Officer in charge of the Fishery Protection Str. "La Canadienne."	Gaspé Basin....	Lower St. Lawrence River and Gulf.
J. A. Verge.....	Overseer....	Cross Point.....	The estuary division of the River Restigouche, extending from Point Maguasha to Head of Tide, on the Quebec side, and from Dalhousie to Head of Tide on the New Brunswick side, comprising about 60 miles.
Pierre Cyr.....	do	Nouvelle.....	About 35 miles of the waters of Bay Chaleur, extending along the coast from Maguasha to Grand Cascapedia River, including the estuary thereof.
John Smith.....	do	New Carlisle.....	About 40 miles of the waters of Bay Chaleur, extending along the coast from the mouth of Grand Cascapedia River to Paspebiac.
John Phelan.....	do	Port Daniel.....	About 30 miles of the waters of Bay Chaleurs, extending along the coast from Paspebiac to Point Macquereau.
.....	.....	.....	About 80 miles of the waters of the south shore of the Gulf of St. Lawrence, extending along the coast from Point Macquereau, the division line between Gaspé and Bonaventure Counties, to Gaspé Basin, together with the York, Dartmouth and St. John Rivers, in Gaspé County, comprising about 100 miles of inland waters.
Ant. Chevrier.....	Overseer....	Amherst.....	About 100 miles of the waters of the Gulf of St. Lawrence around the Magdalen Islands.
Joseph Lemieux.....	do	Mountlouis.....	About 80 miles of the waters of the south shore of the River St. Lawrence, fronting on the County of Gaspé, and extending from Cape Rosiers to Mountlouis.
Jos. I. Letourneau.....	do	Ste. Anne des Monts.	About 80 miles of the waters of the south shore of River St. Lawrence, fronting on the County of Gaspé, and extending from River Ste. Anne des Monts to Cap Chatte.
Johnny Joncas.....	Overseer....	Matane.....	About 54 miles of the waters of the south shore of River St. Lawrence, fronting on the County of Rimouski, and extending from Cap Chatte to River Blanche; together with the River Matane, comprising about 12 miles of inland waters.
L. E. Grondin.....	do	Rimouski.....	About 45 miles of the waters of the south shore of River St. Lawrence, fronting on the County of Rimouski, and extending from River Blanche to Rimouski.
H. Martin.....	do	do	About 35 miles of the waters of the south shore of the River St. Lawrence, fronting on the County of Rimouski, and extending from Rimouski to the division line between the Counties of Rimouski and Temiscouata.
Nap. Levesque.....	do	Isle Verte.....	About 30 miles of the waters of the south shore of River St. Lawrence, fronting on the County of Temiscouata.
Xavier Pelletier.....	do	Ste. Anne de la Pocatière. .	About 45 miles of the waters of the south shore of the River St. Lawrence, fronting on the County of Kamouraska.
Eug. Pelletier.....	do	St. Roch des Aulnais.....	About 70 miles of the waters of the south shore of River St. Lawrence, fronting on the Counties of l'Islet Montmagny, Bellechasse and Lévis, extending from Ste. Anne de la Pocatière to Point Lévis.

SCHEDULE of Fishery Officers, &c.—*Continued.*

PROVINCE OF QUEBEC—TIDAL DIVISIONS—NORTH SHORE.

Name.	Rank.	P.O. Address.	Extent of Jurisdiction.
L. P. Huot.....	do	St. Roch de Québec	About 50 miles of the waters of the north and south shores of the River St. Lawrence around the Island of Orleans.
U. Bhéreur.....	do	Malbaie.....	About 60 miles of the waters of the north shore of River St. Lawrence, fronting on the County of Charlevoix, and extending from River du Gouffre to the division line between the Counties of Charlevoix and Saguenay.
L. N. Catellier.....	Overseer....	Tadoussac.....	About 80 miles of the waters of the north shore of the River St. Lawrence, fronting on the County of Saguenay and extending from the division line between the Counties of Charlevoix and Saguenay to Bersimis ; and the tidal waters of the River Saguenay from its mouth to Chicoutimi, comprising 70 miles ; in all, 150 miles.
Jos. Boily	Warden....	Milles Vaches.....	About 45 miles of the waters of the north shore of the River St. Lawrence, fronting on the County of Saguenay and extending from Escoumains to Bersimis.
N. A. Comeau.....	Overseer....	Godbout.....	About 115 miles of the waters of the north shore of the River and Gulf of St. Lawrence fronting on the County of Saguenay and extending from Manicouagan to Baie des Rochers, including the estuaries of Godbout, Trinity and Penticost Rivers.
T. Mignault.....	do ...	Montmagny	About 75 miles of the waters of the north shore of the Gulf of St. Lawrence, fronting on the County of Saguenay and extending from Baie des Rochers to Point St. Charles, including the estuaries of Marguerite and Moisie Rivers.
Geo. L. Duguay	do ...	Murray Bay.....	About 105 miles of the waters of the north shore of the Gulf of St. Lawrence, fronting on the County of Saguenay, and extending from Point St. Charles to Esquimalt Point, including the estuaries of the St. John and Mingan Rivers.
Geo. Gaudin	do ...	Natashquan	About 100 miles of the waters of the north shore of the Gulf of St. Lawrence fronting on the County of Saguenay and extending from Esquimalt Point to Natashquan River, including the estuaries of the Rivers Agwanus, Nabissippi and Natashquan.
G. Mathurin.....	Overseer....	Montmagny	About 100 miles of the waters of the north shore of the Gulf of St. Lawrence, fronting on the County of Saguenay, and extending from River Natashquan to Cape Whittle, including the estuaries of Washeecoutai, Kegashca, Musquarro and Olomonosheeboo Rivers.
Jean Legouvé.....	Warden	Pacachoo.....	About 140 miles of the waters of the north shore of the Gulf of St. Lawrence, fronting on the County of Saguenay, and extending from Cape Whittle to Checatica.
W. H. Whitely.....	do	Bonne Espérance..	About 65 miles of the waters of the north shore of the Gulf of St. Lawrence, fronting on the County of Saguenay, and extending from Checatica to Blanc Sablon, the boundary line between Quebec and Newfoundland, on the coast of Labrador, including the estuary of the Esquimault River.

SCHEDULE of Fishery Officers, &c.—*Continued.*

PROVINCE OF QUEBEC—NON-TIDAL DIVISIONS.

Name.	Rank.	P. O. Address.	Extent of Jurisdiction.
Alf. Blais.	Overseer	Causapscal	About 30 miles of the waters of Lake and River Matapedia, in the County of Matapedia, from head of Lake to Causapscal.
George Gagnon	Warden	St. Hubert	The inland water to the County of Temiscouata, comprised within an area of about 2,000 square miles.
Henri Coté	do	Baie St. Paul	Lakes in rear of Murray Bay and Bay St. Paul.
Edward Martin	do	do	do do
Jos. Simard	do	Ste. Agnes	do do
J. F. Picotin	do	Drummondville	About 60 miles of the River St. Francis, in the Counties of Yamaska and Drummond, extending from its mouth to Richmond.
N. A. Beach	Overseer	Georgeville	The waters of Lake Memphremagog, in the Counties of Brome and Stanstead, comprising about 50 miles.
P. C. Bourke	do	Somerset	The inland waters of the County of Megantic, comprised within an area of 850 square miles.
J. Laberge	Warden	Chateauguay	About 40 miles of the waters of the River St. Lawrence, fronting on the County of Chateauguay, including Chateauguay River.
John Kelly	Overseer	Beauharnois	About 50 miles of the waters of River St. Lawrence, fronting on the Counties of Beauharnois and Huntingdon; together with about 35 miles of the waters of Chateauguay and Trout Rivers.
J. O. Dion	do	Chambly	About 42 miles of the Richelieu River, extending from Sorel to Richelieu Village.
J. B. Chevalier	do	Iberville	About 30 miles of the waters of Richelieu River, extending from St. John to Lake Champlain.
P. E. Luke	do	Phillipsburg	About 15 miles of the waters of Missisquoi Bay and Pike River, in the County of Missisquoi.
P. W. Nagle	do	Sherbrooke	The inland waters of the County of Stanstead, comprised within an area of about 540 square miles.
Joel Shurtleff	do	Compton	The inland waters of the County of Compton, comprised within an area of about 1,600 square miles.
A. L. Darche	do	Sherbrooke	About 10 miles of the waters of Lake Megantic, in the County of Megantic.
J. B. McDonald	Overseer	Echo Vale	About 10 miles of the waters of Lake Megantic in the County of Megantic.
John McCaw	do	Sherbrooke	Lakes in Counties of Megantic and Wolfe.
V. Veilleux	Warden	St. Ephrim de Tring	The inland waters of the County of Beauce, comprised within an area of about 1,600 square miles.
Jos. Lambert	Overseer	Three Rivers	About 25 miles of the River St. Lawrence and Lake St. Peter, fronting on the County of St. Maurice.
Geo. Boisvert	do	Becancour	About 36 miles of the waters of the River St. Lawrence and Lake St. Peter, fronting on the County of Nicolet.
Jos. Gingras	do	Rivière David	About 30 miles of the waters of Yamaska River in the Counties of Yamaska and St. Hyacinthe.
J. A. Grant	do	Louiseville	About 35 miles of the waters of the River St. Lawrence and Lake St. Peter, fronting on the Counties of Maskinongé and Berthier, including the islands in front.
Jos. Boivin	do	River Beaudet	About 20 miles of the waters of the River St. St. Lawrence, fronting on the County of Soulanges, and extending from Point Beaudet to Coteau Landing.
Félix Latraverse	Warden	Sorel	About 60 miles of the waters of the River St. St. Lawrence and Lake St. Peter, fronting on the Counties of Richelieu, Yamaska and Berthier, including the waters around Sorel and adjoining islands.

SCHEDULE of Fishery Officers, &c.—*Continued.*

PROVINCE OF QUEBEC—NON-TIDAL DIVISIONS.

Name.	Rank.	P. O. Address.	Extent of Jurisdiction.
John Morris	Overseer	St. Lambert	About 50 miles of the waters of the River St. Lawrence, fronting on the Counties of Laprairie, Chambly and Verchères.
André Robert	do	Lachine	About 15 miles of the waters of the River St. Lawrence, fronting on the County of Jacques-Cartier.
Julien Montpetit	Overseer	Isle Perrot	About 15 miles of the waters of the River St. Lawrence, surrounding Isle Perrot.
Jos. Lauzon	do	Terrebonne	The Rivers Jesus and Des Prairies, comprising about 50 miles.
Jos. Filiatrault	do	Ste. Adèle	The inland waters of the Townships of Morin and Beresford, in Terrebonne and Wolfe Counties, and de Salaberry and Grandison, in Argenteuil County, comprised within an area of about 500 square miles.
Toussaint Cloutier	do	Piedmont	The inland waters of the Townships of Abercrombie, Wexford and Kilkenny, in Terrebonne and Montcalm Counties, comprised within an area of about 300 square miles.
R. W. Jones	do	St. Andrews	About 15 miles of the waters of the north side of the Ottawa River, extending from Oka to Carillon.
Theo. Sabourin	do	Rigaud	About 30 miles of the waters of the south side of the Ottawa River, extending from Cascades to Point Fortune.
Pierre St. Pierre	do	Point Fortune	About 40 miles of the waters of the Ottawa River, extending from Calumet to Carillon.
Jos. Marion	do	Hull	The waters of the Ottawa River, fronting on the County of Ottawa, comprising about 75 miles.
Ed. Mohr	do	South Onslow	The waters of the Ottawa River, fronting on the County of Pontiac, extending from the division line between the Counties of Ottawa and Pontiac to Fort Coulonge, and comprising about 50 miles.
J. T. Coghlan	do	Chapeau	The waters of the Ottawa River, fronting on the County of Pontiac, extending from Fort Coulonge to Des Joachims, and comprising about 75 miles.
Robt. Joynt	Warden	Joynt	The inland waters of the Township of Masham, in the County of Ottawa, including Bernard Lake, comprised within an area of about 90 square miles.

PROVINCE OF NOVA SCOTIA.

A. C. Bertram	Inspector of Fisheries.	North Sydney	District No. 1, comprising the Island of Cape Breton.
Robert, Hockin	do	Pictou	District No. 2, comprising the Counties of Cumberland, Colchester, Pictou, Antigonish, Guysborough, Halifax and Hants.
J. R. Kinney	do	Yarmouth	District No. 3, comprising the Counties of Lunenburg, Queen's, Shelburne, Yarmouth, Digby, Annapolis and King's.
		Annapolis County.	
Bailey, W. M	Overseer	Round Hill	Annapolis County, west of a line drawn throug Round Hill, including Round Hill Brook.
Carty, W. T	do	Annapolis	Annapolis County, east of a line drawn through Round Hill.

SCHEDULE of Fishery Officers, &c.—*Continued.*

PROVINCE OF NOVA SCOTIA—*Continued.*

Name.	Rank.	P. O. Address.	Extent of Jurisdiction.
		Antigonish County.	
Aymer, J. R.	Warden	Pomquet Forks, Antigonish	From mouth of harbor to Forks; from thence on the Pomquet River to V. Chisholm's Mills, and from Forks, on the Black River, to Falls.
Cameron, Lochlin	do	Upper South River, Antigonish	From McWilliam's Bridge to head of lake.
Chisholm, Hugh	do	Lower South River, Antigonish	From Antigonish Harbor to McWilliam's, or St. Andrew's Bridge.
Chisholm, Donald	do	Salt Springs, Antigonish	From Trotter's Mill Brook to W. Thompson's Dam.
Chisholm, James	do	St. Andrews	From Campbell's Rock, on Pomquet River, to V. Chisholm's Mill on the Eastern Branch, and to Alex. McDonald's Mill on the Western Branch.
Dexter, Jno.	do	Antigonish	From Antigonish Harbor (foot of marsh) to Trotter's Mill Brook; thence up said brook to Trotter's Mill, including both branches of West River and Bailey's Brook.
Fraser, Duncan	do	St. Joseph	From Pinkeytown Bridge to Stewart's Mills.
Macadam, Alex	do	West River	From Thompson's Dam to Addington Fork's Bridge.
McDonald, Alex	do	Addington Forks	West River; from Fork's Bridge to Pinkeytown Bridge, including Jones' River and Beaver River.
McDonald, Angus	do	Tracadie	From mouth of harbor to foot of marsh; thence up Tracadie Stream to lake; from marsh up to Monastry Brook, including French Settlement Brook and Tarbitts.
McDonald, John	Overseer	Doctor's Brook	Antigonish County.
McDougall, Arch'd.	Warden	McNair's Cove, Cape George	From John McDonald (Bun's) Cove, north side of Cape George, to Crebbing Head, St. George's Bay.
Randall, Albert	do	Bayfield	From shore to Lake.
		Cape Breton County.	
Barrington, York	Overseer	Sydney Mines	North of East Bay to Head of Sydney River, including part of Boularderie Island.
Burke, Jas. P.	do	Main-à-Dieu	Main-à-Dieu and Mira Bay.
Burke, Wm.	Warden	Burk's Bridge, Mira River	Mira Bridge and Trout Brook.
Curry, James N.	do	Sydney Forks	Sydney River and Forks.
Howie, Donald	do	do	do do
Fleming, Michael	do	Little Bras d'Or	Little Bras d'Or District.
Keefe, P.	do	Lingan	North-West Brook, Grand Lake and tributaries.
Morrison, Angus	do	Marion Bridge, Mira	Marion Bridge, Mira.
McAdam, Allan	do	Eskasoni	Eskasoni.
McCormack, Donald	do	Leitche's Creek	Leitche's Creek and George's River.
McDonald, Alex.	Overseer	East Bay	South of East Bay to Salmon River.
McDonald, Archibald	Warden	Ball's Creek	Ball's Creek.
McEachen, Jno.	do	Grand Mira, North	Salmon River.
McLean, Alex.	do	Boisdale	Mill Brook.
McLellan, M.	do	Rory Brack's Brook	Rory Brack's Brook.
McNeil, D. J.	do	Benacadie River	Benacadie River and Lake.
Quinan, Francis	Overseer	Sydney	From Low Point to south head of Cow Bay, and north side of Mira Bay, including Salmon and Sydney Rivers.

SCHEDULE of the Fishery Officers, &c.—*Continued.*

PROVINCE OF NOVA SCOTIA—*Continued.*

Name.	Rank.	P. O. Address.	Extent of Jurisdiction.
		Colchester County.	
Corbett, H.	Warden.	Five Islands	Harrington and North Rivers.
Davison, J. W.	Overseer	Upper Economy	Colchester County, Western Division.
Frame, Samuel.	Warden.	Shubenacadie Riv'r	Shubenacadie River and Gay's River.
Fulton, George.	do	Stewiacke / River, Brookfield	Stewiacke River (upper portion).
Fulton, R. K.	do	Folly Village	De Bert River.
Fulmer, Jesse	do	Five Islands	East and Bass Rivers.
Gass, H.	Overseer	Tatamagouche	Northern Division, County Colchester, comprising Tatamagouche Bay, French and Waugh's Rivers.
Johnson, A. O. B.	Warden.	Middle Stewiacke.	Lower Stewiacke River.
Johnson, T.	do	Salmon Riv., Truro	Salmon River.
Moore, George	do	Economy	Economy River.
Murray, Math. G.	do	Truro	Salmon River.
McKay, Dan.	do	Tatamagouche Riv.	Waugh's River.
Pollock, R. J.	Overseer	Lower Stewiacke.	Stewiacke River (lower portion).
Rutherford, Ed.	Warden.	Stewiacke	Stewiacke River.
Urquhart, Hy.	do	Folly Village	Folly River.
		Cumberland County.	
Fowler, Elijah	Overseer	Parrsboro'	Cumberland County, Western Division, including all streams flowing into the Bay of Fundy.
Gilroy, Geo. W.	do	Oxford	Cumberland County, Eastern Division, embracing all streams emptying into the Straits of Northumberland.
Harrison, Moses	Warden.	Maccan	Maccan River.
Jenks, Frs. L.	do	Parrsboro'	Parrsboro' Head.
Logan, Isaac	do	Amherst Point	Laplanche and Nappan Rivers.
Murphy, Wm.	Overseer	Wallace	Wallace River.
McPherson, Samuel.	Warden.	Pugwash River	Pugwash River.
Porter, Jos.	do	River Herbert	River Herbert.
Smith, Sydney	do	Advocate Harbor.	Apple River.
Smith, Thos. R.	do	Shinimicas River.	Shinimicas River.
Taggart, Pat.	Overseer	Pugwash	Smelt and oyster fisheries at Pugwash.
Wills, Alex. M.	Warden.	Moose River	Moose and Harrington Rivers.
		Digby County.	
Collins, J. A.	Overseer	Westport	Western Division of Digby County, Long and Brier Islands.
Hanley, Wm.	do	Digby	Digby County, Eastern Division.
Journey, Robt.	Warden.	Weymouth	Sissiboo River.
McKay, Lochlin	do	Barton	St. Mary's Bay.
Potter, Chs. T.	do	Joggins' River	Joggins River to Bear River.
		Guysboro' County.	
Bruce, J. R.	Warden.	Guysboro'	From mouth Clam Harbor River to Upper Falls.
Cameron, Angus	do	East River	East River, St. Mary's.
Cameron, D., sen.	do	Upper Caledonia	West River, St. Mary's, from Wallace's Bridge to head of River.
Cook, Jas.	do	Salmon River	Salmon River, from mouth to Graham's West Line.
Cross, John	do	Indian River	Indian River, from mouth to source, District of St. Mary's.
Gunn, Donald	do	Cross Roads	From mouth to Scott's Place, to Country Harbor Lake, including Gunn's Brook, from Main River to Hurley's Lake.
Henderson, Jas.	do	Isaac Harbor	Isaac Harbor and River.
Hudson, Saml. (Lewis' son)	Warden	Country Harbor	Country Harbor and River, from Bridge at Narrows to Mouth.

SCHEDULE of Fishery Officers, &c.—*Continued.*

PROVINCE OF NOVA SCOTIA—*Continued.*

Name.	Rank.	P. O. Address.	Extent of Jurisdiction.
		Guysboro' County—Con.	
Jones, John	Warden	Mouth of Salmon River	Mouth of Salmon River.
Jordan, Wm	do	Glenelg	St. Mary's River, extending from Alex. Ross' (above still water) to Hugh Halters', on the West River.
Kenny, Chas	do	Salmon Riv., West Branch Guysboro'	From foot of Neil's Lake to Beaver Dam Lake, inclusive, and all the lakes through which it passes.
Manson, Alex	do	Lochaber Lakes	St. Mary's Rvier, from Wallace's Lake to Fischer's Mill Dam.
Mattie, Frederick	do	Tracadie, County of Antigonish	Tracadie River to Counties of Guysboro' and Antigonish.
Munroe, W. M.	do	Cole Harbor	Cole Harbor River.
McDonald, Wm.	do	Stillwater	St. Mary's River.
McKay, Robt.	do	Guysborough, Intervale	From head of tide to head of Intervale, on the North Branch, and to Cameron's Mill, on the Valley Branch.
McKeen, Thos	do	Melrose	From Forks to County Line, including McQueen's Mill and Brook to Lake.
McEllum, Jas	do	Salmon River	From Graham's West Line to foot of Neil's Lake, including North Branch and Lake.
McGrath, Adam	do	Cross Roads, St. Mary's	From junction of Antigonish Branch, St. Mary's River, to the head of Two Mile Lake.
McQuarrie, Allan	Overseer	Sherbrooke	District of St. Mary.
Pride, Wm	Warden	Sherbrooke, St. Mary's	From mouth of St. Mary's River to Sinclair Point, including stream from Wine Harbor to Lake.
Sinclair, Robt.	do	Goshen	Eight Island Lake, from Sinclair's Mill to head waters.
Smith, J.	do	Cross Roads	From Cross Road Bridge, Country Harbor River to Eight Island Lake.
Smith, J. P.	do	West River	From H. Hattie's north line to Indianman's Brook, including all tributaries.
Sears, George	do	Sherbrooke	Sherbrooke.
Tory, Jas. A.	Overseer	Guysborough	Guysborough County.
		Halifax County.	
Blakely, Jas	Warden	Ship Harbor	From Ship Harbor to Chezzetcook inclusive.
Coolen, Chas	do	Shad Bay	Peggy's Cove to Torrence Bay including Prospect and Nine Mile Rivers.
Conrad, Chas.	do	Cole Harbor	Cole Harbor.
Fitzgerald, John	Overseer	Portuguese Cove	Halifax Harbor to Margaret Bay, Portuguese Cove.
Fraser, John	Warden	Moser's River	Moser's River and Ecum Secum and Smith's Brook.
Fraser, O. P	do	Ecum Secum, Co. Guysboro'	Ecum Secum River.
Henry, Chas. G.	do	Upper Musquodoboit	Upper Musquodoboit River.
Hughes, P.	do	Tangier River	Tangier River.
Henlan, Joshua	do	Nine Mile River	Upper Nine Mile River.
Keizer, Geo.	do	Lake Porter	Lake Porter and Streams.
Mason, Nath.	do	Head of Margaret's Bay	From Hubert's to Peggy's Cove, Margaret's Bay, Ingraham and Indian Rivers.
Mosher, Dan.	do	Cow Bay, Dartmouth	Cow Bay Run.

SCHEDULE of Fishery Officers, &c.—*Continued.*

PROVINCE OF NOVA SCOTIA—*Continued.*

Name.	Rank.	P. O. Address.	Extent of Jurisdiction.
		Halifax—Con.	
McDonald, Jno	do	Lawrencetown	Big Salmon River, or Lawrencetown River.
McKiel, Nath	do	Sheet Harbor	Sheet Harbor.
McCleam, Donald	do	Chezzetcook River.	Chezzetcook River.
McLeod, George	do	Little Musquodoboit	Middle Musquodoboit River.
Rowlings, Geo.	Overseer	Musquodoboit Harbor	Halifax County, East Division, Dartmouth to Ecum Secum.
Shatford, H. A	Warden	Hubbard's Cove	Pennant River.
Stevens, Robt	do	Musquodoboit Harbor	Musquodoboit River.
Walker, Wm. G	do	Little Salmon R., Preston Road	Little Salmon River.
Whitman, James E	do	Salmon River	Salmon River.
		Hants County.	
Burnham, P. S	Overseer	Windsor	Hants County, Western Division, from Western County Line to Walton.
Colter, John B	do	Milford	Shubenacadie River.
Horne, Arch	Warden	Enfield	South end of Shubenacadie and Nine Mile River.
Mosher, Jas	do	Brooklyn	Rivers Meander and Herbert, from mouth to source.
Mosher, Noah	do	Mosherville	Kennetcook River, from mouth to head of tide.
O'Brien, Jas	do	Maitland	Walton and Kennetcook Rivers.
Smith, W. B	Overseer	Maitland	Shubenacadie River from Five Mile River to its mouth and the south side of Cobequid Bay to Noel.
Snide, John	do	Shubenacadie	Shubenacadie River from Shubenacadie to and including Five Mile River.
		Inverness County.	
Benvie, Peter	Warden	Mabou, Brook Village	Mabou River.
Coady, James	Overseer	S. W. Margaree	Inverness County, East Division.
Crowdis, Mark	Warden	Big Interval	From Bridge to Forks, North-East Margaree River.
Dowling, David	do	Riverside	River Inhabitants.
Gillies, Peter	do	S. W. Mabou	S. W. Mabou.
Graham, Stephen	do	Long Point	Long Point and Judique Rivers.
Murphy, Moses	do	N. E. Margaree	Ainslie Lake.
McDonald, M. B	do	River Dennis	River Dennis.
McDougall, Murdock	do	Lake Ainslie	Trout River.
McEachan, P.	Overseer	Glendale	South Inverness District.
McFarlane, Angus (Angus' son)	Warden	Upper South-West Margaree River.	Upper South-West Margaree River.
McKay, Neil	do	S.W. Margaree Riv	Upper waters and tributaries, Margaree River.
McKay, Neil	do	Trout Brook	Trout Brook, Lake Ainslie.
McKinnon, Angus	do	N.E. Margaree Riv	Crowdis Bridge to head of river.
McLean, D. F	Overseer	Port Hood	Inverness County, Western Division.
McLennan, Allan	Warden	River Dennis	River Dennis and Basin.
Ross, David	Overseer	N. E. Margaree	Inverness County, East Division.
		King's County.	
Bishop, C. E	Warden	Horton	Gaspereaux River.
Brown, Philip	do	Blomidon	Blomidon.
Miller, Jas. S	Overseer	Canning	King's County.
Murphy, L. A	Warden	Gaspereaux	Gaspereaux River.
McIntyre, W	do	Aylesford	Annapolis River.
Reid, R. F	Overseer	Wolfville	King's County.
Thorpe, J. W	Warden	Hall's Harbor	Hall's Point to Cape Split.

SCHEDULE of Fishery Officers, &c.—*Continued.*

PROVINCE OF NOVA SCOTIA—*Continued.*

Name.	Rank.	P. O. Address.	Extent of Jurisdiction.
		Lunenburg County.	
Besancon, Isaiah	Warden	Chester Basin	Middle River.
Boylan, Edward	do	New Ross	Gold River, Upper.
Burns, Amon	do	Upper La Have	From Cooks to source of La Have River.
Cooney, Wilbur	do	Chester	East Branch, Middle River.
Croft, Wm	do	Chester Basin	East Gold River, from Bongard's Point to Gold River Branch, thence to Clarke's, Clinton's and Henry's Lakes.
Demon, David	do	Lower Gold River.	Lower Gold River.
Evans, David	Overseer	Chester	Lunenburg County, East Division, Middle Gold, Martin's and Mushamush Rivers.
Godard, C. E	do	Bridgewater	La Have River.
Hebb, Elie	Warden	Hebb's Cross, West Conquerall	Petite River, from Wallace Brook to source.
Hutt, John	do	Beach Hill, Chester	Middle Gold River.
Keating, Michael	do	East River	East River.
Keddy, J. H	do	New Ross	Larder's River.
Langille, James	do	Chester	Martin's River.
Mossman, Josiah	do	Lunenburg	From Henry Kock's to Knock's.
Meisner, Jacob	Warden	Chester	East River.
Nesbitt, G. A	do	Petite River	Petite River mouth to Wallace Brook.
Schmeisser, N	do	East La Have Ferry	La Have River, from mouth to Wilkie's Cove.
Solomon, W. M	Overseer	Lunenburg	Western Division, Lunenburg County.
		Pictou County.	
Cameron, Allan	Warden	Kenzeeville, Barney's River	East Branch, Barney's River, from Sutherland's Marshy Hope to Barney's River.
Cameron, Thos	do	West Durham	West River.
Campbell, Peter	do	New Glasgow	East River.
Campbell, A. F	do	Pictou Island	Pictou Island Lobster Fishery.
Douglas, Alex	do	Alma	Middle River.
Foot, Jas	do	Lower French Riv.	Lower French River.
Fraser, Donald	do	Hopewell	Fork and West Branch Lake.
Fraser, Thos	do	Island Hopewell	East River, from Tide Head to Grant's Factory.
Fraser, Samuel	do	Bridgeville	Grant's Factory to East Branch Lake.
Murray, D. A	do	Avondale	Barney's River, from McDonald's Bridge to head.
	Overseer	Lismore	Pictou County, East Division, including Sutherland's, French and Barney's Rivers, Bailey's Brook and Shore Factory, from Pictou Harbor eastward to County Line.
McDonald, Donald	Warden	New Glasgow	Sutherland's River.
McDonald, Wm	do	French River	French River.
McDougall, Chas	do	Garden of Eden	East River of St. Mary's and Garden Lake.
McKay, John	do	River John	River John.
McKenzie, Geo	do	Lower Cariboo Riv.	Cariboo River.
McLean, Donald	do	Avondale	Barney's River.
McLean, Donald	do	Bailey's Brook	Bailey's Brook.
Pritchard, A. O	Overseer	New Glasgow	Central Pictou County, including Middle, East and West Rivers.
Sutherland, Robt	do	River John	Pictou County, West Division, including Middle, East, West, Cariboo, Tony and John Rivers.
		Queen's County.	
Fitzgerald, John	Overseer	Mill Village	From Steam Mills to Salter's Falls on Port Medway River.
Ford, Theo	Warden	Milton	Milton Bridge up to Port Liverpool River.
Foster, I. C	do	Port Medway	Puddingpan Island to Toby's Island.
Miles, Barnabas	do	Greenfield	Salter's Falls to Pawn Hook, on Port Medway River.
Sellon, S. T. N	Overseer	Liverpool	Queen's County.

SCHEDULE of Fishery Officers, &c.—*Continued.*

PROVINCE OF NOVA SCOTIA—*Continued.*

Name.	Rank.	P. O. Address.	Extent of Jurisdiction.
		Richmond County.	
Cameron, Duncan	Overseer	St. Peter's	Eastern Division, from River Bourgeois to east boundary of County, including said River.
Grant, Charles	Warden	River Inhabitants.	River Inhabitants.
Gerroir, Felix	do	Arichat	Grand Ruisseau.
Grouchy, J. P	do	do	Descousse River.
Kyte, Patrick	do	River Tier, St. Peter's	River Tier.
Marmeau, Frs	Overseer	Arichat	Western Division, from River Bourgeois to west boundary of County.
Murchison, Donald	Warden	Grand River	Grand River.
McPherson, Farquhar	do	Riv. Moulin, Grandigue Ferry	River Moulin.
McRae, Allan	do	West Bay	West Bay, Black River.
Proctor, John, sen	do	Port Hawkesbury	Inhabitants River.
Sampson, M	do	Petit de Grat	Petit de Grat Inlet.
Sampson, J	do	L'Ardoise	L'Ardoise.
		Shelburne County.	
Acker, Timothy	Warden	Birchtown	Birchtown River.
Crowell, P	do	Barrington	Barrington River.
Goudy, E. S	Overseer	do	Clyde River to Yarmouth County Line.
Holden, C. A	Warden	Jordan River	Ogden's Brook and Indian River.
Kehoe, M	do	Lockeport	Green Harbor.
McGill, W. Jno	Overseer	Shelburne	Shelburne County.
McKinney, Lewis	Warden	Round Bay	Round Bay River.
McLean, Wm	do	Port Saxon	Port Saxon.
Nichol, F. G	do	Clyde River	Clyde River.
Ryer, George	do	Shelburne	Roseway River.
		Victoria County.	
Beaton, Roderick	Warden	McNaughton	Hume's River.
Bingham, Wm	Overseer	Englishtown	Englishtown and Ingonish Division.
Buchanan, Donald	Warden	Barachois River	Barachois River.
Capstick, Thos	do	Bay St. Lawrence	Salmon River, Bay St. Lawrence.
Finlayson, Donald	do	Middle River	Middle River.
Foyle, Wm	do	Baddeck River	Peter's Brook.
Hellen, Robt	do	Cape North	Cape North.
Ingraham, G	do	Baddeck	From Baddeck to head of Long Point.
McAuley, Donald	do	do	Baddeck River.
McCharles, D	do	S. Gut, St. Ann's	South Gut, Ste. Ann's.
McDonald, Duncan	Overseer	Aspy Bay	Victoria County, North Division, from Smoky Head to Bay St. Lawrence.
McDonald, Archd	Warden	do	South Branch, Middle River.
McDonald, Archd	do	North Harbor	North Harbor.
McDougall, Michael	do	Washabuck River	Washabuck River.
McGregor, Frs	do	Hunter's Mount'ns	Entrance of Baddeck River.
McIver, Malcolm	do	Indian Brook	Indian Brook.
McKenzie, Chris	do	Baddeck	Middle River.
McLeod, Donald	do	St. Ann's River	River St. Ann's.
McLellan, John	do	Middle River	Middle River.
McMillan, Donald	do	Baddeck	Baddeck River.
McNeil, John S	do	Grand Narrows	From Grand Narrows to McKay's Point.
McQuarrie, Donald	Overseer	Baddeck	Victoria County, South Division.
McRae, John (Rory's son)	Warden	McLeod	Middle River.
McRae, Donald	do	Baddeck	Baddeck River and tributaries.
McRae, Kenneth	do	Middle River	Indian Brook.
McRae, Donald	do	Red Head, Badde'k	Red Head, Baddeck.
McRae, John	do	Gold Diggings, Mlddle River	Gold Diggings, Middle River.

SCHEDULE of Fishery Officers, &c.—*Continued.*

PROVINCE OF NOVA SCOTIA—*Concluded.*

Name.	Rank.	P. O. Address.	Extent of Jurisdiction.
		Yarmouth County.	
Brand, J. I.	Warden	West Pubnico	Pubnico and Argyle.
Doucet, Jérôme	do	Tusket	Tusket River.
Hatfield, J. A	Overseer	do	Yarmouth County.
Jeffrey, James	Warden	Overton	From Chebogue Point to Chegoggin Point.
Kavanagh, Wm.	do	Tusket	Gurill's Bridge to Coldstream.
Muise, Vital	do	Tusket Forks	Tusket Forks.
Nickerson, E	do	Yarmouth	Salmon River.
Porter, Z	do	Beaver River	Beaver River.
Porter, John B	do	Eel Lake	Eel Lake.
Thurston, Wm., sr	do	Chegoggin	Chegoggin River.

PROVINCE OF NEW BRUNSWICK.

J. H. Pratt	Inspector of Fisheries and officer in command of 'Cruiser'	St. Andrew's	District No. 1, comprising the County of Charlotte, including the Islands of Campobello and Grand Manan, and Passamaquoddy Bay.
Robert A. Chapman	Inspector of Fisheries.	Moncton	District No. 2, comprising the Counties of Restigouche, Gloucester, Northumberland, Kent and Westmoreland.
David Morrow	do	Oromocto	District No. 3, comprising the Counties of Albert, St. John, King's, Queen's, Sunbury, York, Carleton and Victoria.
		Albert County.	
Dryden, J. W	Warden	Hillsboro'	Mouth of Petitcodiac River and Dorchester Bay.
Oliver, Bartlet	do	Harvey, Little Rocher	Rocher Bay.
Stewart, Suthd	Overseer	Alma	County of Albert.
Taylor, Wallace	Warden	Coverdale	Petitcodiac River.
Wilbur, Kinnear T	do	Midway, Harvey	Germantown Lake and Shepody River.
		Carleton County.	
Burt, George R	Overseer	Upper Woodstock.	St. John River and tributaries, from Long Creek, to Tobique River.
Lindsay, G. Alex	do	Highlands	Miramichi River(S. W.) from head waters to forks.
Scott, J. W.	Warden	Canterbury	St. John River, from Eel River to Woodstock.
		Charlotte County.	
Ash, Wm.	Overseer	Beaver Harbour	East District of County Charlotte.
Barry, Thos	Warden	Lower Falls, Magaguadavic	Lower Falls, Magaguadavic River.
Best, G. S.	Overseer	Beaver Harbour	East Division, from La Tête to Lepreaux.
Brown, Barth.	do	Campobello	Campobello and West Isles, with coasts and streams in Charlotte County.
Campbell, D. F	do	St. Andrew's	Inner Bay of Passamaquoddy.
Carrol, Edward	Warden	Grand Manan	Whitehead Island.
Dick, Samuel	do	La Tête	Inner Bay, Passamaquoddy.
Dixon, Robert	do	Lepreaux	Seely's Cove to Lepreaux.
Holmes, Thomas	do	Deer Island	West side, Deer Island.
Johnson, Robt.	do	Upper Falls, Magaguadavic	Upper Falls, Magaguadavic River.
Lord, J. M.	Overseer	Deer Island	Deer Island.
McLaughlin, W. B.	do	Grand Manan	Grand Manan Island and spawning grounds.
Todd, Frank	do	St. Stephen	St. Croix River and tributaries.

SCHEDULE of Fishery Officers, &c.—*Continued.*

PROVINCE OF NEW BRUNSWICK—*Continued.*

Name.	Rank.	P. O. Address.	Extent of Jurisdiction.
		Gloucester County.	
Aché, Adolphe	Warden	Shippegan	Shippegan.
Boyd, Alex	Overseer	Miscou Harbour	Little Shippegan to Miscou.
Calnan, John, jun.	Warden	Kinsale	That part of River Tête à Gauche, from a mile above the Mill Dam to the source of said river.
Comeau, Frédéric	do	Petit Rocher	Petit Rocher, from Belledune to Mill Stream.
Cormier, Gustave	Overseer	Caraquet	Caraquet Herring Banks.
Dempsey, Miles	Warden	Salmon Beach	Salmon Beach, from Bass River to Grindstone Point.
Gibbs, Valentine	do	Pokemouche	Pokemouche.
Hache, J. L	Overseer	Caraquet	Caraquet and Shippegan oyster beds with St. Cimon's Inlet and River.
Hickson, James	Overseer	Bathurst	River Nepissiguit and tributaries, with sea coast and streams, from Belledune River to Grindstone Point.
Poirier, Joseph	do	Grande Anse	Bay Chaleurs, between Grand Anse and Point Mizzonette.
Robicheau, Olivier	Warden	Ferguson's Point	Coast from Northumberland County line to Green Point, with Big and Little Tracadie Rivers.
Rogers, W	do	Tête à Gauche, Bathurst	Tête à Gauche River.
Sisk, William	do	Black Rock	Grindstone Point to Grand Anse.
Trudel, Camille	do	Shippegan	Shippegan.
Walsh, William	Overseer	Pokemouche	The District of Pokemouche.
		Kent County.	
Collet, A. L	Warden	Buctouche	Buctouche Bay.
Cormier, Chas	Overseer	Cocagne	Cocagne River.
Girouard, M. A	do	Buctouche	Big Buctouche River.
Guimon, Lazare	do	St. Louis	From Kouchibouquacis to Chockfish River.
Hannah, Wm. F	do	Richibucto	Richibucto River.
Leger, F. B.	Warden	Little Buctouche River	Little Buctouche River.
Leblanc, A. T	Overseer	Legerville	Canaan River (upper part).
Mauzerolles, Nicholas	Warden	Kouchibouquacis	From Kouchibouquacis River to Point Sapin.
Miller, Jas. L	do	Kingston	From mouth of Nicholas River, on the Buctouche, upwards, including Nicholas River.
		King's County.	
Belyea, J. A	Overseer	Westfield	St. John River and Belle Isle Bay and streams running thereinto.
Fenwick, Edwin	Warden	Studholm	Millstream.
Gosline, Samuel	Overseer	Smith's Creek	From mouth of Smith's Creek, upwards.
Pearson, I. R	Warden	English Settlement	Washademoak Lake and its tributaries in King's and Queen's Counties.
Spragg, Z. S	do	Belle Isle	Belle Isle Bay.
		Northumberland County.	
Parker, Thos	Overseer	Newcastle	Main S. W. Miramichi River from Doaktown to Beaubair's Island.
Wyse, William	do	Chatham	Main Miramichi River and Bay, from Nelson to Burnt Church, both sides.
Williston, J. G	do	Bay du Vin	Miramichi Bay from Point aux Car to Fox Island.
Noble, John	do	Miramichi Bay	Miramichi Bay, from Fox Island to Point Escuminac.
Robertson, John	do	Tabusintac	Coast line and Miramichi Bay, from Gloucester County line to Neguac.

SCHEDULE of Fishery Officers, &c.—*Continued.*

PROVINCE OF NEW BRUNSWICK—*Concluded.*

Name.	Rank.	P. O. Address.	Extent of Jurisdiction.
		Northumberland County—Con.	
Robichaud, P.	do	Upper Neguac	Inner Miramichi Bay, from Neguac to Burnt Church.
Hogan, John	do	Newcastle	Main Miramichi River and North-West Miramichi, from Chatham upwards, including Little South West and Sevogle Rivers.
Martin, Alex	Warden	Neguac	Miramichi Bay at Neguac.
Irving, William	do	Lower Newcastle	Main Miramichi at Lower Newcastle.
Watling, Tubal	do	Black River	Black River.
		Queen's County.	
Hetherington, I. T	Overseer	Jenkins, Johnson	From Cole's Island to foot of Washademoak Lake
Langan, Isaih	Warden	Chipman, Gaspereaux	Salmon River.
Philips, Robert	do	Canaan Rapids	Head waters, Washademoak Lake.
		Restigouche County.	
McPherson, Alex	Overseer	River Charlo	From Belledune to Dalhousie.
		Sunbury County.	
Griffith, Chas	Overseer	Burton	St. John River, Indiantown to County Line of York.
Hoben, G. W	Warden	Sheffield	do do do
		St. John County.	
O'Brien, Jos	Overseer	Carleton, St. John.	St. John County.
Rourke, E. V	do	St. Martin's	Eastern part of St. John County, from Quaco Head to Goose River.
		Victoria County.	
Caron, Magloire	Warden	Middle St. Francis	Above Fish River Rapids.
Edgar, Thos	do	Three Rivers	Middle Division, Tobique River.
Larlie, Daniel	do	Andover	Salmon River.
McDougall, John	do	Rocky Brook, Parish of Lorne.	Three Brooks, Branch of Tobique River.
Pelletier, Beloni	do	Caron's Brook	Baker's Lake and adjoining streams.
Roberts, Chas., jun	do	Andover	Lower Division, Tobique River.
Ryan, Thos. D	Overseer	Grand Falls	County of Victoria.
		Westmoreland County.	
Cormier, D. T	Overseer	Pré-d'en-haut	Dorchester Bay.
Deacon, W. B	do	Shediac	Shediac Harbor and River.
Goodwin, Robt	do	Bay Verte	The Parish of Sackville and Westmoreland.
		York County.	
Campbell, J. A.	Warden	Kingsclear, Fredericton	Grand Pass, on St. John River, upwards, from Crock's Point to Lower Line of York County, including Nashwaak River.
Cronkhite, A. B	do	Southampton	St. John River, from Upper Line of York County to Crock's Point, on River St. John.
Cunningham, A.	Overseer	Canterbury St'tion	Skiff and Palfry and other lakes.
Glendenning, D.	Warden	Harvey Station	Magaguadavic Stream and Lake Oromocto and other lakes.
McNelly, L.	do	Upper Kingsclear	From Burgoyne's Ferry to Nackawack.
Moir, A	Overseer	Bloomfield	From Price's Bend to Burnt Hill, S.W. Miramichi.
Orr, Robt	do	Fredericton	County of York.

SCHEDULE of Fishery Officers, &c.—*Continued.*

PROVINCE OF PRINCE EDWARD ISLAND.

Name.	Rank.	P. O. Address.	Extent of Jurisdiction.
Edward Hackett.....	Inspector of Fisheries .	Tignish	Prince Edward Island.
		King's County.	
Conaghan, John.....	Warden	Bay Fortune.....	Bay Fortune, from Little River to Rollo Bay.
Cuddie, James.....	do	Murray Harbor...	Murray Harbor and River, with Lots 63 and 64.
Dingwell, J. H.....	do	Morell River.....	Fourth District of Morell.
Duffy, Peter.....	do	St. Peter's.....	St. Peter's and Morell.
Griffin, Henry.....	do	Georgetown.....	Cardigan Bay and Montague River.
Mathewson, M.....	do	Grand River	Grand River.
Mitchel, James..	do	Peake's Road.....	First District of Morell.
Morrow, Henry.....	do	Souris River	Souris River.
McCullough, Patrick....	do	Peake's Road.....	Third District of Morell.
McDonald, Allan.....	do	North Lake.....	North Lake.
McDonald, Ronald.....	do	Naufrage River...	Naufrage River.
O'Brien, John.....	do	Morell River.....	Second District of Morell.
Reilly, Daniel.....	do	Montague River..	Montague, from Georgetown Road to Whim Road, and from County Line to the coast.
		Queen's County.	
Beers, George F.....	Warden	Cherry Valley....	Pownal Bay and Seal River.
Buotte, Dominique.....	do	Rustico.....	District of Rustico.
Currie, Neil.....	do	Long Creek, West River.....	Shore of Lot 65, South of West River.
Delaney, Jonathan.....	do	New London.....	New London.
Garnum, Lionel.....	do	Winter River.....	Winter River.
Howatt, James.....	do	Crapaud.....	Crapaud.
Loughrin, John	do	Orwell.....	Orwell and Newton.
MacKenzie, Finlay.....	do	Pinette River.....	Lots 60 and 62.
Murphy, Thomas.....	do	Stanley Bridge....	Trout River.
Murphy, Joseph.....	do	China Point, Lot 50	District of Pownal Bay and Seal River.
McDonald, Charles C...	do	Blooming Ponds..	Alewife fishery of Blooming Ponds.
Powers, James.....	do	Hunter River.....	Huntly and Wheatley Rivers.
Ready, Michael.....	do	Tracadie.....	Winter River.
Shaw, A. C.....	do	Long Creek, Lot 65	District of West River.
Stanley, Francis.....	do	Charlottetown	Charlottetown, including East, West and North Rivers.
Stephenson, George.....	do	New Glasgow.....	New Glasgow River.
Whitehead, Willam.....	do	S. W. River.....	South-West River.
		Prince County.	
Arsenault, S. P.....	Warden	Egmont Bay.....	Lot 15, Egmont Bay.
Aylward, Peter..	do	Tignish	Skinner's Pond, southward, from south end of Nail Pond to Black Pond, inclusive, and east to railway.
Bryant, D. L.....	do	Mount Pleasant, Lot 18.....	From western bank of Big Pierre Jacques River to the point where the north line of Lot 15 touches the shore of Egmont Bay.
Chiasson, John..... (Chapel)	do	Tignish.....	Tignish, from line of Lot 2, northward to include Little and Big Tignish, and westward to Railway.
Clark, Henry.	Overseer....	Lower Freetown..	Dunk River and Egmont Bay.
Doyle, Lawrence..	Warden	Lot 3.....	From Little Miminigash to Cape Wolfe.
Gillis, V. S.....	do	Indian River, Lot 18.....	Richmond Bay and Malpeque.
Holland, J. F. B.....	do	Bedeque	From Graham's Head, Lot 26, to Cape Traverse.
Howat, Calvin.....	do	Tryon River.....	Tryon River.
McBride, Patrick.....	do	Central Bedeque..	Dunk River.
McDonald, James A....	do	Grand River.....	Grand River.
McDonald, Alex.....	do	Alberton	Cascumpeque Bay and Inlet, from the Narrows to Kildare Capes.

SCHEDULE of Fishery Officers, &c.—*Concluded.*

PROVINCE OF PRINCE EDWARD ISLAND—*Concluded.*

Name.	Rank.	P. O. Address.	Extent of Jurisdiction.
		Prince Co.—Con.	
Nelligan, James M	Warden	Nail Pond	Nail Pond, Skinner's Pond.
Ramsey, J. A.	do	Hamilton, Lot 18..	Oyster Cove, Richmond Bay.
Ramsey, James	do	Tyne Valley	Lot 13, Trout River.
Ramsey, J. K.	do	West Cape	From Cape Wolfe to Brae River.
Reid, Peter	do	Coleman	Lots 5, 6 and 10.
Rix, John	do	Miminigash	Miminigash.
Sharpe, John A.	do	Summerside	Summerside, including Bedeque Bay and South part of Richmond Bay.
Sharpe, George A.	do	Lot 12	Lot 12, on the Narrows.

PROVINCE OF MANITOBA AND NORTH-WEST TERRITORIES.

Alex. McQueen	Inspector	Winnipeg	Province of Manitoba.
F. C. Gilchrist	Overseer	Fort Qu'Appelle	Qu'Appelle River and adjoining lakes.
O. T. Stone	do	Sussex, Craven P.O	Long Lake, North-West Territories.

PROVINCE OF BRITISH COLUMBIA.

Thomas Mowat	Inspector	New Westminster	Province of British Columbia.

FISH CULTURE.

Name.	Rank.			P. O. Address.
Samuel Wilmot	Superintendent of Fish Culture for the Dominion			Ottawa.
Charles Wilmot	Officer in charge of Government Fish Hatchery			Newcastle, Ont.
William Parker	do	do		Sandwich, Ont.
L. N. Catellier	do	do		Tadoussac, Que.
	do	do		Gaspé Basin, Que.
Alex. Mowat	do	do		Deeside, Metapedia, Que.
A. H. Moore	do	do		Magog, Que.
A. B. Wilmot	do	do		Bedford Basin, N. S.
C. A. Farquharson	do	do		Sydney, C. B., N. S.
Isaac Sheasgreen	do	do		South Esk, N. B.
Charles, McCluskey	do	do		Grand Falls, N. B.
Thomas Mowat	do	do		New Westminster, B. C.

RECAPITULATION.

Provinces.	No. of Officers.
Ontario	93
Quebec	64
Nova Scotia	257
New Brunswick	88
Prince Edward Island	51
Manitoba and North-West Territories	3
British Columbia	1
Fish Culture	12
Officers and crews of seven fisheries protection vessels	161
Total	730

In addition to the above regular staff, 102 temporary local Guardians were employed during the year as occasion required.

APPENDIX No. 2.

FISHING BOUNTIES.

GENERAL STATEMENT of Fishing Bounty Claims received for the Year 1888.

Province.	County.	No. of Claims Received.	No. of Claims Rejected.	No. of Claims held in abeyance.	No. of Claims Paid.
Nova Scotia	Annapolis	203	2		201
	Antigonish	160	1		159
	Cape Breton	514	7		507
	Colchester	1			1
	Digby	314	1		313
	Guysboro'	1,190	1		1,189
	Halifax	1,388	3	14	1,372
	Inverness	684	2		682
	King's	54	1		53
	Lunenburg	812	1	1	810
	Pictou	15			15
	Queen's	209	1		208
	Richmond	1,290	2		1,288
	Shelburne	693	2		691
	Victoria	729	6		723
	Yarmouth	225	8		217
	Totals	8,481	38	15	8,429
New Brunswick	Charlotte	773	4		769
	Gloucester	952	15		937
	Kent	240	3		237
	Northumberland	27	13		14
	Restigouche	1			1
	St. John	61	4		57
	Westmoreland	11			11
	Totals	2,065	39		2,026
Prince Edward Island	King's	624	14	313	304
	Prince	389	3		389*
	Queen's	140			141
	Totals	1,153	17	313	834
Quebec	Bonaventure	1,459	3		1,456
	Gaspé	2,320	10		2,311*
	Rimouski	11	5		6
	Saguenay	538	1		537
	Totals	4,328	19		4,310

RECAPITULATION.

Nova Scotia	8,481	38	15	8,429
New Brunswick	2,065	39		2,026
Prince Edward Island	1,153	17	313	834
Quebec	4,328	19		4,310
Grand Totals	16,027	113	328	15,599

*NOTE.—The number of Bounty Claims paid for 1888 includes several claims of previous years held in in abeyance for enquiry. This will explain the difference between claims paid and claims received after deducting those rejected and held in abeyance.

GENERAL STATEMENT of Payments made on account of Fishing Bounty Claims to **Boats** and **Vessels**, for the year 1888.

Province.	County.	Amount Paid.	Total.
		$ cts.	$ cts.
Nova Scotia	Annapolis	1,370 51	
	Antigonish	1,063 50	
	Cape Breton	4,041 33	
	Colchester	85 50	
	Digby	3,446 18	
	Guysboro'	9,564 21	
	Halifax	11,615 99	
	Inverness	6,679 90	
	King's	395 95	
	Lunenburg	17,687 81	
	Pictou	110 50	
	Queen's	2,669 82	
	Richmond	10,499 15	
	Shelburne	9,036 09	
	Victoria	4,999 50	
	Yarmouth	6,519 96	
			89,785 90
New Brunswick	Charlotte	6,561 00	
	Gloucester	8,749 96	
	Kent	2,014 98	
	Northumberland	228 34	
	Restigouche	28 50	
	St. John	799 64	
	Westmoreland	72 50	
			18,454 92
Prince Edward Island	King's	2,721 06	
	Prince	4,608 50	
	Queen's	1,763 40	
			9,092 96
Quebec	Bonaventure	9,891 50	
	Gaspé	17,625 55	
	Rimouski	27 50	
	Saguenay	5,314 20	
			32,858 75
			150,192 53
	LESS—Refund		7 00
	Grand Total		150,185 53

NOTE.—Of the above amount $194.90 has been charged against the appropriation for 1889-90.

DETAILED STATEMENT showing Fishing Bounties paid to Vessels in each County, for the Year 1888.

Province.	County.	No. of Vessels.	Tonnage.	Average Tonnage.	No. of Men.	Amount Paid.
						$ cts.
Nova Scotia	Annapolis	8	180	22	31	217 01
	Cape Breton	17	332	20	55	423 33
	Colchester	1	57	57	5	85 50
	Digby	57	1,248	22	335	1,696 68
	Guysboro'	27	884	33	184	1,289 71
	Halifax	102	2,657	26	606	3,809 99
	Inverness	24	880	37	137	1,247 90
	King's	6	91	15	16	123 45
	Lunenburg	133	9,411	71	1,667	13,893 81
	Queen's	18	1,023	57	228	1,495 82
	Richmond	58	1,638	28	407	2,390 65
	Shelburne	69	3,727	54	788	5,193 59
	Victoria	2	24	12	6	36 00
	Yarmouth	67	3,856	57	985	5,661 46
	Totals	589	26,008	44	5,450	37,564 90
New Brunswick	Charlotte	90	1,514	17	317	2,113 50
	Gloucester	24	369	15	88	537 46
	Kent	8	191	24	28	244 48
	Northumberland	5	118	24	26	155 34
	Restigouche	1	19	19	4	28 50
	St. John	22	334	15	81	487 64
	Totals	150	2,545	17	544	3,566 92
Prince Edward Island	King's	19	504	26	110	654 06
	Prince	14	618	44	64	782 00
	Queen's	4	123	31	75	180 90
	Totals	37	1,245	34	249	1,616 96
Quebec	Gaspé	21	783	37	183	1,098 05
	Saguenay	30	1,059	35	205	1,573 20
	Totals	51	1,842	36	388	2,671 25

RECAPITULATION.

Nova Scotia	589	26,008	44	5,450	37,564 90
New Brunswick	150	2,545	17	544	3,566 92
Prince Edward Island	37	1,245	34	249	1,616 96
Quebec	51	1,842	36	388	2,671 25
Grand totals	827	31,640	38	6,631	45,420 03

DETAILED STATEMENT of Fishing Bounties paid to **Boats** for the Year 1888.

Province.	County.	No. of Boats.	No. of Men.	Amount Paid.
				$ cts.
Nova Scotia	Annapolis	193	319	1,153 50
	Antigonish	159	296	1,063 50
	Cape Breton	490	998	3,618 00
	Digby	256	492	1,749 50
	Guysboro'	1,162	2,258	8,274 50
	Halifax	1,270	2,057	7,806 00
	Inverness	658	1,520	5,432 00
	King's	47	74	272 50
	Lunenburg	677	973	3,794 00
	Pictou	15	31	110 50
	Queen's	190	317	1,174 00
	Richmond	1,230	2,094	8,108 50
	Shelburne	622	1,058	3,842 50
	Victoria	721	1,396	4,963 50
	Yarmouth	150	232	858 50
	Totals	7,840	14,115	52,221 00
New Brunswick	Charlotte	679	1,221	4,447 50
	Gloucester	913	2,311	8,212 50
	Kent	229	493	1,770 50
	Northumberland	9	19	73 00
	St. John	35	85	312 00
	Westmoreland	11	19	72 50
	Totals	1,876	4,148	14,888 00
Prince Edward Island	King's	285	575	2,067 00
	Prince	375	1,105	3,826 50
	Queen's	137	461	1,582 50
	Totals	797	2,141	7,476 00
Quebec	Bonaventure	1,456	2,681	9,891 50
	Gaspé	2,290	4,177	16,527 50
	Rimouski	6	7	27 50
	Saguenay	507	987	3,741 00
	Totals	4,259	7,852	30,187 50

RECAPITULATION.

Nova Scotia	7,840	14,115	52,221 00
New Brunswick	1,876	4,148	14,888 00
Prince Edward Island	797	2,141	7,476 00
Quebec	4,259	7,852	30,187 50
Grand Totals	14,772	28,256	104,772 50

DETAILED STATEMENT of Fishing Bounties paid to **Vessels**, for the Year 1888.

PROVINCE OF NOVA SCOTIA.

ANNAPOLIS COUNTY.

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew.	Amount of Bounty Paid.
							$ cts.
83,258	Alfred	Annapolis	22	Chas. Longmire	Hillsburn	2	21 20
90,667	Edward Everett	Digby	57	David Hayden	Lower Granville	5	66 50
83,255	Floyd	Annapolis	20	Jno. W. Sproule	Litchfield	7	30 00
77,766	Laconic	Shelburne	15	David Milner	Parker's Cove	3	18 00
77,958	Maggie M	Annapolis	16	Parker, Zwicker	Clements	3	19 20
83,253	Rescue	do	17	Josiah Burrell	Clementsport	4	22 95
59,347	Sea Gull	do	20	Joseph Hall, Agent		4	23 56
77,956	Speed	do	13	Alf. J. Burrell	Clementsport	3	15 60

CAPE BRETON COUNTY.

88,507	Belle of Rome	Sydney	14	Thos. Bagnell	Gabarouse	3	16 80
77,851	Buxom	do	11	Daniel McGrath	Little Bras d'Or.	2	16 50
92,592	Dreadnot	do	10	Peter Leblanc	do	3	15 00
90,718	Gladys	do	57	D. A. Smith, M.O	North Sydney	3	68 40
88,513	Ida	do	10	Joseph Jessome	Little Bras d'Or.	2	15 00
80,977	J. W. Ingraham	do	14	Chas. Anesty, sen	North Sydney	4	21 00
80,966	J. R. Washington	do	39	Joseph Stacey	Gabarouse	4	43 86
88,516	King Fisher	do	10	P. S. Young, *et al.*	Lingan	5	11 68
92,600	Merit	do	13	Alex. Leblanc	Little Bras d'Or.	3	19 50
88,509	Marion	do	16	Arthur Kendall	Louisburg	2	16 80
80,973	Ocean Wave	do	20	Samuel Moore	Little Bras d'Or.	4	30 00
88,504	Quick Step	do	12	Fred. Marsh	Lingan	3	18 00
74,038	River Queen	do	32	Peter Desveaux	Little Bras d'Or.	6	48 00
75,707	R. Grant	do	43	Jonathan Noel	North Sydney	1	36 29
77,857	Sailor's Bride	do	10	Edward O'Brien	Little Bras d'Or.	3	15 00
75,703	Stella Maria	do	10	T. McLellan	North Sydney	4	15 00
92,599	Thistle	do	11	Patrick O'Toole	Little Bras d'Or.	3	16 50

COLCHESTER COUNTY.

88,435	Snow Drift	Halifax	57	John Roberts	Tatamagouche	5	85 50

DIGBY COUNTY.

72,978	Annie Coggins	Digby	22	Livingstone Coggins	Westport	6	28 86
75,721	Angeline	Yarmouth	67	Wm. Snow	Digby	10	86 14
71,032	Arthur	do	21	Wesley Outhouse	Tiverton	5	25 60
75,612	Alice	do	17	Handly Bates	Freeport	6	25 50
83,431	Acadian	Weymouth	32	Eloi L. Comeau	Meteghan River.	9	45 60
74,331	Condor	Yarmouth	11	Howard Titus	Westport	5	16 50
85,684	Constitution	Digby	28	James W. Dillon	Digby	6	33 60
88,403	David Sprague	do	31	Collins Titus	Westport	1	25 18
75,711	Dove	Yarmouth	20	Joseph Ossinger	Tiverton	8	30 00
85,683	Edith L	Digby	16	Isaac Peters, M.O	Westport	5	22 00
77,740	Elmer	do	15	Walter Coggins	do	6	22 50
75,757	Etta	Yarmouth	17	J. W. C. Webber	do	6	25 50
90,662	Edward A. Horton	Digby	67	Jos. E. Snow	Digby	7	75 37

DETAILED STATEMENT of Fishing Bounties paid to Vessels, &c.—Nova Scotia—*Con.*

DIGBY COUNTY—*Concluded.*

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner. or Managing Owner.	Residence.	No. of Crew.	Amount of Bounty Paid.
							$ cts.
80,797	Ella H	do	13	M. & E. Haines	Freeport	5	19 50
75,614	Fawn	do	17	Isaac Peters, M.O	Westport	4	21 26
75,601	Flash	do	10	James A. Peters	do	5	15 00
74,329	Fairy Queen	Yarmouth	12	Wallace Coggins	do	5	16 50
80,798	Freddie G	Digby	18	George Gower	do	6	27 00
85,550	Fair Play	Yarmouth	11	John Sollows, sen	Port Maitland	5	16 50
85,686	Gladstone	Digby	16	Augustus Haycock	Westport	6	24 00
83,260	Gazelle	Annapolis	20	D. & O. Sproul	Digby	3	24 00
80,799	Hattie T	Digby	16	Frank P. Titus	Westport	4	20 00
80,800	Helen Maud	do	20	Chas. McDormand	do	7	30 00
80,650	Happy Home	Yarmouth	14	John Pugh, *et al*	do	5	19 25
75,751	Helen Gertrude Nickerson	do	16	M. & E. Haines	Freeport	6	24 00
80,604	Jennie C	do	16	Charles Hicks	Westport	6	24 00
75,597	Little Fury	Digby	13	Benjamin Taylor	Digby	3	19 50
75,594	Lizzie G	do	16	Wm. McGrath	Granville	6	22 27
88,408	Live Yankee	do	57	Howard Anderson	Digby	7	76 00
85,685	L. M. Ellis	do	35	Holland Outhouse	Tiverton	11	52 50
77,783	Lost Heir	Port Medway	15	Amos H. Outhouse	Tiverton	7	21 09
85,690	Lora T	Digby	15	Joseph Thurber, *et al*	Freeport	7	22 50
80,786	Lizzie P	do	12	Mary E. Wyman	do	5	18 00
77,618	May Queen	Barrington	34	Livingstone Coggins	Westport	11	51 00
85,682	Malapert	Digby	23	James Glaven	do	8	34 50
80,704	Minnie C	do	18	Chas. H. Bailey	do	6	27 00
59,356	M. P. Reed	Annapolis	30	D. & O. Sproule	Digby	5	45 00
57,108	May Rose	Yarmouth	26	Jno. W. Snow	do	5	30 32
74,322	Morning Star	do	25	James W. Cousins	do	6	37 50
85,533	Minnie C	do	12	Jno. N. Sanders	Port Maitland	4	16 20
83,434	Mary May	Weymouth	19	J. & O. White	Gilbert's Cove	2	21 37
72,977	Nellie H. Ham	Digby	26	Isaac Peters, M.O	Westport	7	34 68
90,873	Primrose	Yarmouth	34	Wm. Mackensie	Port Maitland	7	45 32
75,714	Prince	do	10	Geo. H. Stevens	Freeport	5	15 00
83,132	Restless	Digby	25	Frank Suthern	Westport	7	35 15
80,784	Silver Cloud	do	41	Andrew Coggins	do	8	58 08
75,725	Stella	Yarmouth	24	Byard Powell	Freeport	5	29 25
85,558	S. A. Crowell	do	23	Luke Leblanc	Salmon River	5	29 56
75,726	Thrush	do	13	Hanley Outhouse	Tiverton	4	17 55
37,282	Victoria	Digby	29	Handford Outhouse	do	9	41 32
80,630	Vanity	Yarmouth	11	Chas. Cann & Co	Port Maitland	4	16 50
74,317	Willie	do	21	Henry Glaven	Westport	9	31 50
75,595	West Wind	Digby	25	Syda & Cousins	Digby	6	32 80
72,980	Wave	do	11	Samuel Thurber	Freeport	4	13 74
85,559	Willie F	Yarmouth	12	Edward C. Thurber	do	4	15 00
71,334	Watchman	Barrington	15	Moïse Thibodeau	Church Point	5	20 62
75,722	Yuba	Yarmouth	15	Geo. H. Denton	Westport	6	22 50

GUYSBORO' COUNTY.

80,985	Annie Roy	Guysboro'	80	Geo. Jost	Guysboro'	14	120 00
90,736	Alert	Port Hawkesb'ry	11	W. A. Keating	Port Mulgrave	2	16 50
41,771	Atalia	Guysboro'	34	T. H. Peeples	Pirate Harbor	5	51 00
80,992	Annie W	do	10	Elijah Walters	Wine Harbor	2	11 24
80,991	Atalanta	do	80	Stephen Sweet	Isaac's Harbor	18	120 00
80,990	Bonnie Doon	do	13	Robt. H. Morrisson	Guysboro'	6	19 50
90,841	C. W. Lundy	do	12	Alex. Avery	Larry's River	4	18 00
88,432	Drucilla	Halifax	33	James Jamieson	Canso	5	38 50
80,988	Dido	Guysboro'	59	Stephen Sweet	Isaac's Harbor	11	79 01
80,994	Esperance	do	10	T. Munroe, sr	Whitehead	3	12 00
80,999	Guardian Angel	do	21	Joseph Fougère, jr	Larry's River	6	31 50

DETAILED STATEMENT of Fishing Bounties paid to **Vessels**, etc.—Nova Scotia—*Con.*

GUYSBORO' COUNTY—*Concluded.*

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew.	Amount of Bounty Paid.
							$ cts.
80,996	Gertie Bell	Guysboro'	15	Alex. Munroe	Whitehead	6	20 89
83,400	Hope	Halifax	14	Frederick Pelrine	Larry's River	4	21 00
80,997	Hippomenes	Guysboro'	80	Stephen Sweet	Isaac's Harbor	15	120 00
57,715	John Laurence	Halifax	23	Alex. Henderson	New Harbor	6	34 50
85,724	Jumbo	Lunenburg	21	Henry Linden	Charlo's Cove	5	28 87
83,091	Jennie	Port Hawkesb'ry	11	Jno. Jamieson	Steep Creek	2	16 50
74,039	James Henry	Sydney	18	Wm. A. Archibald	Sherbrooke	2	27 00
80,989	Laura	Guysboro'	80	Henry M. Jost	Guysboro'	14	120 00
69,964	Lizzie A	Port Hawkesb'ry	20	J. F. & A. H. Reeves	Pirate Harbor	4	30 00
80,998	Lorne	Guysboro'	50	Stephen McMillan	Isaac's Harbor	15	75 00
69,141	Mary Elizabeth	Halifax	16	Wm. G. Webber	Torbay	5	24 00
83,092	Maud F	Port Hawkesb'ry	11	Wm. Critchett	Steep Creek	2	16 50
80,970	Orion	Halifax	24	Edward B. Pelrine	Larry's River	6	36 00
75,892	Peter Mitchell	Port Hawkesb'ry	26	Wm. & Wm. P. Power	Pirate Harbor	4	39 00
80,852	Victory	Halifax	80	E. J. Purcell	Port Mulgrave	14	120 00
36,991	Vegete	do	32	John Maskell	Jeddore	4	43 20

HALIFAX COUNTY.

83,106	Annie Isabella	Halifax	23	J. & T. Bowser	Musquodoboit Harbor	7	32 34
69,143	Arequipa	do	36	Geo. Barnard *et al*	Ecum Secum	6	50 14
61,625	Alpha	do	18	Joshua Dauphiney	French Village	6	25 07
74,020	Addie	do	16	Denis Fagan	Ketch Harbor	3	19 20
90,721	Brilliant Star	do	36	P. & J. Hartlin	Jeddore	10	54 00
94,662	Bessie Florence	Lunenburg	12	Chas. W. Twohig	Pennant	3	18 00
64,914	Bloomingdale	Halifax	14	James York	Eastern Passage	5	21 00
73,969	Bertha E	do	21	Henry A. Shatford	Hubbard's Cove	4	31 50
74,071	Condor	do	20	John Julien *et al*	W. Chezzetcook	3	24 00
74,108	City Belle	do	21	Joseph Graves	West Dover	6	31 50
85,381	Champion	do	17	Jno. H. Slaunwhite	Terrence Bay	3	20 40
85,655	Daisy	do	16	C. & W. Johnson	Indian Harbor	4	24 00
85,663	Daring	do	18	Chas. Slaunwhite, sr	Terrence Bay	3	23 62
83,320	Dessie M	Port Medway	80	James T. Thompson	Halifax	15	112 94
85,667	Dart	Halifax	10	George Julien, jr	W. Chezzetcook	2	15 00
92,564	Evangeline	do	23	Daniel Baker	West Jeddore	7	34 50
90,674	Eddie	Shelburne	74	C. W. Anderson	Halifax	16	111 00
80,832	Ella May	Lunenburg	16	George Adam	Indian Harbor	3	24 00
74,091	Eastern Clipper	Halifax	35	John H. Fader, jr	Head Harbor	3	45 93
90,726	Ellen Maud	do	16	George Schnare	Pennant	4	21 60
88,227	Fleetwing	do	32	Thomas Lapierre, sr	W. Chezzetcook	10	48 00
61,972	Fanny	do	17	Gilbert Kempt	Petpiswick Hbr	5	25 50
55,836	Frank Newton	Sydney	40	Theo. Conrod	Spry Bay	7	60 00
90,717	Florence	Halifax	80	C. W. Anderson, M.O.	Halifax	16	120 00
83,180	Friend	do	17	S. Hubley and Charles Garrison	Indian Harbor	5	26 50
77,751	Flora Dell	do	63	Geo. W. Smith	do	13	91 12
90,489	Greenleaf	do	44	James Julien, M.O.	W. Chezzetcook	12	63 46
57,760	Guardian Angel	do	36	Alex. McCarthy	Taylor's Head	7	54 00
88,220	Grandee	do	14	Wm. Hart	Sambro	4	18 90
85,382	G. H. Marryatt	do	24	G. H. Marryatt	Halifax	7	36 00
37,488	Gipsy Lass	do	26	John P. Slaunwhite	Terrence Bay	5	39 00
80,987	Geraldine	do	80	Arthur N. Whitman	Halifax	18	120 00
69,097	Highland Jane	do	32	George Hartlin	East Jeddore	10	48 00
92,574	H. W. Wentzel	do	36	Wm. Wentzel *et al*	W. Chezzetcook	11	54 00
42,295	Hero	do	34	Peter Mason	Tangier	8	51 00
88,213	H. H. Belle	do	13	Isaiah Covey *et al*	Hacketts Cove	2	19 50

DETAILED STATEMENT of Fishing Bounties paid to **Vessels**, etc.—Nova Scotia—*Con.*

HALIFAX COUNTY—*Continued.*

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew.	Amount of Bounty Paid.
							$ cts.
69,172	Hope	Lunenburg	31	Michael McGrath	Upper Prospect.	4	41 85
85,379	Helena	Halifax	17	Denis Ryan	Lower Prospect.	5	25 50
90,484	Helena May	do	70	Arthur N. Whitman	Halifax	14	98 42
83,134	Infant	Lunenburg	15	Alex. Coolen	Herring Cove	3	22 50
83,306	Iona	Halifax	26	Andrew Sullivan	do	7	39 00
74,080	J. A. Kirk	do	16	John Jackson	Spry Harbor	5	22 00
54,132	John Franklin	do	18	Edward Dempsey	Herring Cove	6	27 00
75,779	John Millard	Barrington	68	Thos. H. Renner	Halifax	11	102 00
37,590	Lark	Halifax	20	R. & T. Dukes	West Jeddore	5	30 00
74,099	Leading Breeze	do	15	D. & G. Covey	Hackett's Cove	5	22 50
94,661	L. C. Tough	do	12	John Tough	Pennant	3	15 75
69,105	Lady of the Lake	do	20	Edward Walsh, sr	Upper Prospect.	3	24 00
85,385	Minnie M	do	27	Wm. Nieforth *et al*	Seaforth	9	40 50
88,431	Mayflower	do	21	J. & P. Lapierre	W. Chezzetcook.	6	31 50
83,123	Margaret	do	18	James McDonald	Harrigan's Cove.	6	27 00
90,722	Minnie Bell	do	11	John Kent	Musquodoboit Harbor	2	13 75
85,388	Mary Alice	do	21	Chas. Beaver	Spry Bay	5	31 50
46,498	Mariner	do	56	W. C. & J. Henley	do	9	84 00
92,568	Mary Kate	do	13	John Westhaver	Sheet Harbor	5	19 50
90,269	Maud Carter	do	80	Walter C. Boak	Halifax	12	105 00
85,646	Maud	do	15	Alfred Boutilier	Indian Harbor	5	22 50
59,474	Merit	Lunenburg	41	Louis Garnier	Halifax	1	35 87
61,935	Maria	Halifax	17	John Hubley, sr	French Village	3	25 50
83,408	M. A. Franklyn	do	22	J. Morash & A. Launt	West Dover	3	26 40
85,653	Mary O'Dell	do	10	James L. Richardson	Indian Harbor	1	10 00
83,108	Maud	do	15	Joseph Reyno, jr	Herring Cove	4	22 50
85,664	Mary E	do	14	Andrew Twohig	Pennant	3	21 00
92,576	Mayflower	do	13	James Young	Sambro	3	19 50
83,107	North Star	do	26	James Lapierre *et al*	W. Chezzetcook.	7	39 00
90,716	New Dominion	do	34	J. & J. Fillis	do	11	51 00
80,843	Nettie, B. H	do	23	W. & J. Hearn	Upper Prospect.	6	34 50
85,665	Nellie D	do	12	Daniel Smith	Sambro	4	18 00
37,608	Ocean Belle	Halifax	68	Jno. Allan & Sons	Halifax	7	102 00
92,571	Primrose	do	14	Jas. F. Slaunwhite	Terrence Bay	3	21 00
57,681	Quickstep	do	22	Edward Gallagher	Ketch Harbor	5	33 00
59,462	Rival	do	20	Henry Falconer	Ship Hbr. Lake.	6	30 00
73,119	Royal	do	12	Edward Corney	East Dover	5	18 00
88,223	River Belle	do	11	Richard Christian	Upper Prospect.	3	16 50
90,275	Ralph, E. S.	do	19	Louis H. Gray	Sambro	5	24 42
88,439	Ripple	do	20	Fredk. Horne, jr	S. E. Passage	5	30 00
92,575	Robinetta	do	14	Wm. Henneberry	Sambro	4	18 90
88,229	Seaway	do	22	Gabriel Murphy	W. Chezzetcook.	7	33 00
37,519	Safeguide	do	36	Jno. T. Abriel	Pope's Harbor	9	54 00
41,787	Silver Dart	do	30	John Hutt	Tangier	7	45 00
85,390	Susan C	do	21	Daniel Croucher	Hackett's Cove	4	28 35
83,118	Spray	do	15	Charles Fader, sr	Head Harbor	4	22 50
61,985	Squirrel	do	15	Geo. J. Longard	Upper Prospect.	4	20 25
83,114	Sailors Fancy	do	16	Lawson Pace	Glen Margaret	4	21 60
74,087	Sea Gem	do	30	Wm. Jennex	East Jeddore	7	42 18
75,833	Twilight	do	14	Eli Baker	do	6	19 50
90,494	Two Brothers	do	21	Thos. Nieforth	Seaforth	6	31 50
90,490	T. W. Wolf	do	31	Robert Wolf *et al*	W. Chezzetcook.	9	46 50
90,482	Two-forty	do	18	Geo. H. Slaunwhite	Terrence Bay	3	21 60
61,946	Union	do	23	Colin Mitchell	East Jeddore	4	27 09
90,485	Violet West	do	36	Thos. A. Gaetz *et al*	Seaforth	8	46 62
88,228	Welcome	do	33	Geo. Bonang, M. O	W. Chezzetcook.	9	49 50
90,723	Winnie L	do	31	Daniel Manette *et al*	do	10	49 50
90,488	Wave	do	19	Jno. Blackburn	Upper Prospect.	4	23 74
92,569	Walter	do	15	Charles Gray	Sambro	4	22 50
92,578	Willetta	do	13	Joseph Gray	do	3	19 50

DETAILED STATEMENT of Fishing Bounties paid to **Vessels**, etc.—Nova Scotia—*Con.*

HALIFAX COUNTY—*Concluded.*

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew.	Amount of Bounty Paid.
							$ cts.
66,727	Willow	Halifax	18	Jeffrey Gorman	Herring Cove	3	23 62
75,578	Wily	Lunenburg	13	James Morash, jr	West Dover	6	19 50
88,222	Wave	Halifax	15	F. Slaunwhite, jr., and A. Jollimore	Terrence Bay	3	18 00
71,368	Zelu	do	21	A. & S. Publicover	West Dover	5	28 87
85,378	Zephyr	do	14	Robt. Slaunwhite	Terrence Bay	3	21 00

INVERNESS COUNTY.

90,731	Annie E. Paint	Pt. Hawkesbury	80	W. H. & F. L. M. Paint	Pt. Hawkesbury	11	104 00
75,561	Boreas	Lunenburg	41	John Colford	Port Malcolm	6	61 50
37,063	British Pearl	Guysboro'	78	Peter Paint, jr	Pt. Hawkesbury	6	117 00
88,343	Ceylon	Pt. Hawkesbury	80	W. H. & F. L. M. Paint	do	11	104 00
75,782	Crescent	Arichat	27	Camille White	Margaree Hbr.	5	34 70
37,565	Defiance	Guysboro'	24	Anthony Walker	Basin River Inhabitants	3	36 00
83,082	Emma	Pt. Hawkesbury	24	Sévérin Arseneau	Margaree Hbr.	7	36 00
77,763	Fanny Young	do	80	W. H. & F. L. M. Paint	Pt. Hawkesbury	13	112 00
83,088	Good Intent	do	22	George Walker	Riv. Inhabitants	2	33 00
69,154	Head Reaches	do	56	Robt. Murray	Port Richmond	6	84 00
90,735	Hector	do	11	Nicholas McDonald	Basin River Inhabitants	2	16 50
90,734	H. M. Crosby	do	64	Peter Paint, jr	Pt. Hawkesbury	13	89 60
69,969	Morning Light	do	39	David Walker	Basin River Inhabitants	4	58 50
69,125	Mayflower	Halifax	11	P. Cormier *et al*	E. Harbor Cheticamp	5	16 50
80,841	Nina	do	13	Thomas Stevens	Halifax	2	16 25
61,630	Olive J.	do	57	Peter Malcolm	Port Malcolm	8	80 75
64,033	Ripple	Pt. Hawkesbury	34	J. W. Cruickshanks	Riv. Inhabitants	8	51 00
83,094	Saint Mary	do	15	Désiré Chiasson	Margaree Hbr.	7	22 50
75,830	St. Thomas	Guysboro'	37	Médéric Aucoin	Cheticamp	4	55 50
53,603	Seaflower	Pt. Hawkesbury	25	P. Robin & Co.	E. Harbor Cheticamp	7	37 50
83,093	Swallow	do	12	Angus McIsaac	Port Hood	2	12 60
83,096	St. Patrick	do	11	A. Welsh and A. McDonald	Port Hastings	3	16 50
92,567	Trial	Halifax	13	Fred. Chiasson *et al*	Margaree Hbr.	6	19 50
64,718	Temperance	Pt. Hawkesbury	26	Jno. McFarlane	do	4	32 50

KING'S COUNTY.

92,487	Alice Maud	Windsor	12	W. Bishop & H. Parker.	Hall's Harbor	3	18 00
88,397	Ada B.	do	10	Carr Bolsor	Blomidon	3	15 00
75,430	Dolphin	Annapolis	11	Henry E. Ogilvie	Kingsport	3	16 50
49,411	Ellen	Yarmouth	29	Isaac Cook	Harborville	2	30 45
85,442	Mystery	Windsor	14	John F. Paul	Hall's Harbor	3	21 00
85,629	Unexpected	do	15	Fred. Parker	do	2	22 50

DETAILED STATEMENT of Fishing Bounties paid to **Vessels**, etc.—Nova Scotia—*Con.*

LUNENBURG COUNTY.

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew.	Amount of Bounty Paid.
							$ cts.
85,739	Aubrey A.	Lunenburg	80	Benj. Anderson	Lunenburg	14	120 00
92,621	A. G. Heisler	do	80	Alf. Heisler	do	14	120 00
90,870	Arietis	do	80	Chas. Hewitt, M.O.	do	14	120 00
90,600	Acadia	do	79	David Smith	do	12	118 50
83,176	Amazon	do	73	Chas. L. Silver, M. O.	do	13	102 20
77,601	Atlas	do	52	Emmanuel Seller	Feltz South	11	78 00
90,852	Athlete	do	78	Jno. B. Young, M.O.	Lunenburg	12	117 00
94,644	Angler	do	80	Arthur H. Zwicker	do	14	120 00
88,602	Algeria	do	80	Ephraim Lohnes, M.O.	Ritcey's Cove	14	120 00
46,476	Amiel Corkum	do	53	Josiah Wilkie, M.O.	La Have	11	79 50
92,637	Bertie C. H.	do	80	Thos. Hamm, M. O.	Lunenburg	14	120 00
88,341	Blizzard	do	80	A. J. Wolf	do	16	120 00
85,347	Brilliant	do	80	Jno. B. Young, M.O.	do	14	120 00
85,345	Beatrice	do	78	Wm. A. Zwicker, M.O.	do	13	117 00
94,647	Bonus	do	80	Geo. Kresor, M.O.	Ritcey's Cove	14	120 00
85,730	Beulah	do	80	Ephraim Lohnes, M.O.	do	14	120 00
94,651	Bessie A.	do	80	Wm. McGregor, M.O.	La Have	14	120 00
94,648	Batavia	do	80	Jas. Spearwater, M.O.	do	14	120 00
85,732	Conductor	do	80	S. Watson Oxner, M.O.	Lunenburg	14	120 00
90,869	Clara E. Mason	do	80	David Smith	do	12	120 00
94,646	Carrie C. W.	do	80	Martin Westhaver	do	14	109 41
92,622	Coronet	do	80	Arthur H. Zwicker	do	14	120 00
74,014	Corsica	do	79	Henry Greser, M.O.	La Have	12	118 50
90,857	Capio	do	72	Albt. McKean, M.O.	Pleasantville	14	108 00
94,652	Cashier	do	80	W. N. Reinhardt, M.O.	La Have	16	120 00
90,856	Cleta	do	80	do	do	14	120 00
88,348	Cymbeline	do	80	Norman Rafuse, M.O.	do	14	120 00
85,642	Charlotte E. C.	do	80	Wm. Colp	Mahone Bay	12	120 00
94,645	C. A. Chisholm	do	80	Abraham Ernst	do	12	120 00
94,658	C. A. Ernst	do	57	Timothy Hebb	do	12	85 50
94,653	C. U. Mader	do	80	C. U. Mader	do	14	120 00
94,643	Carrie M. C.	do	39	Wm. Chandler	Fox Point	9	55 57
88,358	Dolphin	do	80	H. Wynacht & C. Silver	Lunenburg	13	115 71
85,736	Dominion	do	80	Wm. Young	do	14	120 00
77,607	Dianthus	do	45	Geo. Parks	La Have	8	67 50
88,618	Darling	do	80	Jacob B. Sarty, M.O.	do	14	120 00
88,355	D. A. Mader	do	80	J. Alex. Mader	Mahone Bay	12	120 00
83,136	Eva Stewart	do	80	Samuel Risser	Lunenburg	14	120 00
69,173	Ellen May	do	60	David Westhaver	do	10	79 60
90,584	Eldora	do	75	John Creaser, M.O.	La Have	14	112 50
90,865	Etta May	do	58	Edmund Hirtle, M.O.	do	12	87 00
94,650	Elsie	do	47	Jno. Schmeisser, M.O.	do	11	70 50
88,606	Egeria	do	80	J. D. Sperry, M.O.	Petite Rivière	15	120 00
88,356	Energy	do	80	Alex. Chisholm	Mahone Bay	14	120 00
85,731	Eva L. H.	do	62	James Wentzel	Martin River	10	93 00
85,738	Emma F.	do	13	J. F. Boutillier	Aspotogan	4	17 55
90,590	Evelyn	do	77	Amiel Corkum	La Have	12	96 24
88,357	Floresta	do	57	Stephen Moser	South	12	85 50
92,638	Florence M.	do	80	Alex. Silver, jr.	Lunenburg	12	120 00
85,631	Forest Belle	do	80	Leonard Young, M.O.	do	12	120 00
80,829	Florence B.	do	32	Elias Richard, sr.	La Have	7	48 00
71,338	Fish Hawk	Barrington	49	T. A. Wilson	Bridgewater	10	65 01
66,749	Flash	Halifax	24	Thomas Coolen	Pox Point	7	36 00
94,656	Florin	Lunenburg	58	Edward Wiegel	Dayspring	12	46 21
88,347	Geneva	do	80	Allan R. Morash, M.O.	Lunenburg	14	120 00
85,734	Glenola	do	80	Charles L. Silver, M.O.	do	15	120 00
90,582	G. A. Smith	Lunenburg	80	Wm. Young	Lunenburg	16	120 00
90,862	Grenada	do	80	Reuben Romkey, M.O.	La Have	14	120 00
90,859	Hector W. McGregor	do	80	Wm. McGregor, M.O.	do	14	120 00
90,585	Iris	do	80	David Smith, M.O.	Lunenburg	14	120 00
92,639	Jennie Miller	do	80	Henry Adams, M.O.	do	12	120 00

DETAILED STATEMENT of Fishing Bounties paid to Vessels, etc.—Nova Scotia—*Con.*

LUNENBURG COUNTY—*Continued.*

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Manging Owner.	Residence.	No. of Crew.	Amount of Bounty Paid.
							$ cts.
90,599	J. A. Hirtle	Lunenburg	73	James A. Hirtle, M.O.	Lunenburg	14	109 50
94,654	J. W. Geldert	do	80	S. Watson Oxner, M.O.	do	17	120 00
74,019	Jewel	do	52	Leonard Young, M.O.	do	10	78 00
85,723	Jessie A. Loye	do	80	do	do	14	112 50
85,727	Jessie	do	40	James Hunt, M.O.	La Have	9	60 00
83,485	John M. Inglis	Liverpool	79	J. S. Wolfe, M.O.	New Dublin	14	114 55
90,854	Latona	Lunenburg	80	L. Anderson & Co., M.Os	Lunenburg	14	109 41
80,822	Leone	do	79	Isaac Mason	do	12	118 50
90,867	Laura A. Smith	do	80	S. Watson Oxner, M.O.	do	14	109 41
88,351	Louisa J. Selig	do	80	J. Moyle Rudolf, M.O.	do	15	120 00
88,352	Linaria	do	80	S. Hilton, jun., M.O.	Petite Rivière	14	120 00
88,360	Lettie M. Hardy	do	80	W. A. Pickels	Mahone Bay	19	120 00
36,495	Lady Speedwell	do	56	Enos Publicover	Blandford	11	84 00
92,640	Minerva	do	80	Wm. Acker	Lunenburg	12	120 00
83,177	Maggie Belle	do	72	Alfred Heisler	do	12	108 00
92,635	M. B. Smith	do	80	Chas. Hewitt	do	14	120 00
92,633	Magnolia	do	80	Joshua Heckman, M.O.	do	12	120 00
90,586	Morris Wilson	do	80	J. Henry Wilson	do	15	120 00
92,632	Monarch	do	80	James Young	do	8	120 00
90,583	Moriah	do	79	Arthur H. Zwicker	do	12	118 50
83,173	Maggie Smith	do	80	Reuben Smith, M.O.	La Have	14	120 00
90,851	Niagara	do	73	Henry Gerhart	South	12	98 53
92,634	Nellie B	do	80	Alfred Heisler, M.O.	Lunenburg	14	116 00
88,613	N. P. Christian	do	80	do	do	18	120 09
88,342	Nova Zembla	do	80	Adam Knickle	do	12	120 00
85,343	Narcissus	do	80	S. Watson Oxner, M.O.	do	16	120 00
92,636	Nonpareil	do	80	John Zinck	do	13	120 00
94,655	Nevada	do	46	James Bell	La Have	9	69 00
88,603	Nokomis	do	80	C. U. Mader	Mahone Bay	14	120 00
90,598	Osprey	do	80	Christian Geldert	Lunenburg	14	120 00
88,344	Onward	do	80	Chas. Hewitt	do	14	109 41
85,632	Ocean Belle	do	80	Leonard Young, M.O.	do	12	105 00
88,346	Olive	do	80	Daniel Getson, M.O.	La Have	14	120 00
90,587	Ornatus	do	80	James Keizer, M.O.	do	12	120 00
94,641	Ovando	do	80	Jeffry Publicover, M.O.	do	15	120 00
88,350	Orion	do	78	C. U. Mader	Mahone Bay	12	117 00
75,570	Olive Rranch	do	14	Jno. Church	Aspotogan	3	21 00
80,838	Ocean Bride	do	20	Albert E. Rafuse	Conquerall Bank	6	26 24
85,647	Pembina	do	80	L. Anderson & Co., M.Os	Lunenburg	14	120 00
85,331	Parisian	do	80	Allan R. Morash, M.O.	do	14	120 00
85,337	Parthenia	do	80	S. Watson Oxner, M.D.	do	14	120 00
85,641	Pleroma	do	80	Wm. C. Smith	do	14	109 41
77,622	Pleasantville	do	80	Albt. McKean	Pleasantville	14	120 00
85,349	Rise Over	do	80	Wm. Smeltzer	Lunenburg	14	120 00
92,320	Rialto	Liverpool	46	A. A. Currie, M.O.	New Dublin	5	48 85
83,133	Regina B	Lunenburg	80	Reuben Ritcey, M.O.	La Have	14	120 00
90,593	Ralph	do	51	Solomon Smith, M.O.	do	11	76 50
92,631	Ray	do	11	Henry Awalt	Aspotogan	2	13 75
85,350	Saxon	do	79	James A. Hirtle, M.O.	Lunenburg	11	102 70
85,737	Scylla	do	80	James W. King	do	14	116 00
90,868	Sadie	do	79	Chas. Smith, M.O.	do	12	110 02
88,605	S. A. Morash	do	80	Henry Greser, M.O.	La Have	14	120 00
88,349	Senovar	do	80	Nathan Hiltz	Martin's River	13	120 00
74,096	Silver Stream	Halifax	35	C. E. Nass	Chester	10	52 50
92,629	Sea Queen	Lunenburg	21	Geo. Young, sen.	Mill Cove	5	31 50
94,657	T. W. Langille	do	71	Francis Conrad	South	14	106 50
74,118	True Love	Halifax	30	Chas. Bell	La Have	7	45 00
85,729	Tyrone	Lunenburg	80	Isaac Heckman, M.O.	do	15	120 00
92,623	Torridor	do	80	Wm. McGregor, M.O.	do	16	120 00
88,609	Undaunted	do	47	W. N. Reinhardt, M.O.	do	8	70 50
85,338	Viola	do	80	Alfred Heisler, M.O.	Lunenburg	18	120 00

DETAILED STATEMENT of Fishing Bounties paid to **Vessels**, etc.—Nova Scotia—*Con*

LUNENBURG COUNTY—*Concluded.*

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew.	Amount of Bounty Paid.
							$ cts.
88,609	Virgescoe	Lunenburg	57	Thos. Hamm, M.O.	Lunenburg	9	85 50
85,334	Valorus	do	57	Benjamin Lohnes	South	12	82 21
83,353	Violet	do	80	David Smith, M.O.	Lunenburg	12	115 38
90,597	Vivian	do	80	Arthur H. Zwicker	do	15	120 00
85,735	Victory	do	80	do	do	14	120 00
83,164	Valiant	do	80	Ephraim Lohnes, M.O.	Ritcey's Cove	15	120 00
85,635	Vanilla	do	80	Jas. A. Romkey, M.O.	La Have	14	120 00
94,649	Valenar	do	80	Nathan Hiltz	Martin's River	13	120 00
83,174	W. E. Young	do	80	J. Henry Wilson	Lunenburg	14	120 00
88,614	Wilhelmina	do	54	Edmund Neal, M.O.	La Have	9	81 00
94,642	Winnie C	do	55	Edmen Walter, M.O.	do	11	82 50

QUEEN'S COUNTY.

85,482	Angola	Liverpool	80	James C. Innes, M.O.	Liverpool	19	117 00
75,778	Coronila	do	64	Colin McLeod, M.O.	do	13	96 00
75,620	Cordelia	Shelburne	15	Oliver Tupper	Port Lebert	4	22 50
85,344	Donzella	Lunenburg	80	Adam Selig	Vogler's Cove	14	109 41
83,308	Ella	Liverpool	10	Amos Martin	Liverpool	3	15 00
75,571	Fanny	Lunenburg	16	C. W. Clattenburg	Vogler's Cove	5	24 00
92,624	Heloise	do	80	John W. Hutt	Port Medway	13	115 71
83,494	Lizzie Wharton	Port Medway	80	W. R. Cohoon	do	16	116 47
83,316	Lottie	do	80	S. E. Teel	Vogler's Cove	14	120 00
83,310	Myosotis	do	80	Asa Morine & Son	Port Medway	19	117 00
83,315	Mazurka	do	80	Wm. Vogler	Vogler's Cove	15	120 00
75,762	May Queen	Liverpool	17	Wm. H. Bartling, M.O.	Liverpool	4	22 95
83,493	Mary C	do	80	Hendry & McMillan, M.O	do	20	120 00
92,313	Martha	do	11	Wm. Rhynard	Brooklyn	4	16 50
83,314	Spartan	Port Medway	80	W. R. Cohoon	Port Medway	17	120 00
83,500	Stella	Liverpool	10	Wm. A. Farquhar	Hunt's Point	3	15 00
85,387	Topaz	Halifax	80	Hendry & McMillan, M.O	Liverpool	19	111 81
83,495	Utopia	Liverpool	80	James C. Innes, M.O.	do	16	116 47

RICHMOND COUNTY.

83,086	Ada M	Pt. Hawkesbury	20	Peter W. Gruchy	D'Escousse	5	27 50
77,544	Alpha	Arichat	41	Wm. LeVesconte	do	10	61 50
64,713	Amelia M	Pt. Hawkesbury	14	Andrew Boudrot	Gros Nez	4	21 00
35,996	Blue Bell	Arichat	25	D. Gruchy & Son	D'Escousse	7	37 50
38,501	B. Weir & Co	do	25	Wm. J. Bissett	River Bourgeois.	7	35 15
43,109	Chatham Head	Chatham, N. B.	24	Dominique Fougère	Poulamond	8	34 00
72,061	C. P. M	Arichat	22	Désiré Burke	River Bourgeois.	7	33 00
74,100	Candid	do	23	do	do	7	34 50
77,822	Eliza Smith	do	44	Léonie Poirier	Low. D'Escousse	10	66 00
61,606	Edmund Russell	do	28	Dominique Boudrot	Petit de Grat	6	42 00
75,616	Eliza Jane	Shelburne	22	Alex. Vigneau	Arichat	2	33 00
83,401	E. M. McDonald	Halifax	14	M. A. McDonald	Framboise	5	21 00
38,477	Elizabeth	Arichat	18	A. Burk, *et al*	River Bourgeois.	6	27 00
83,395	Elerie	Halifax	29	Charles Boudrot	do	7	43 50
69,190	Emma	Arichat	47	A. J. Boyd	do	10	70 50
77,843	Elizabeth	Halifax	30	John Stairs & Co	Halifax	7	42 18
61,617	Eva May	Guysboro'	29	do	do	8	43 50

DETAILED STATEMENT of Fishing Bounties paid to **Vessels**, etc.—Nova Scotia—*Con.*

RICHMOND COUNTY—*Concluded.*

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew.	Amount of Bounty Paid.
							$ cts.
74,116	Fama	Halifax	43	Wm. Le Vesconte	D'Escousse	10	64 50
57,733	Farewell	Arichat	23	Abram Sampson	West Arichat	2	34 50
83,399	Fannie R. C	Halifax	22	Peter Boudrot	River Bourgeois.	5	28 28
38,481	G. H. B	Arichat	36	F. W. Bissett	do	5	54 00
38,326	Harriet	do	26	Arthur Leblanc	Arichat	3	39 00
88,454	Jubilee	do	34	D. Gruchy & Son	D'Escousse	9	51 00
38,486	Julia	do	20	Louis Burk	River Bourgeois.	6	30 00
80,972	John Vincin	Sydney	17	David Sampson	L'Ardoise	6	25 50
72,070	Lennox	Arichat	46	D. Gruchy & Son	D'Escousse	10	69 00
75,875	Lida & Lizzie	do	56	Wm. LeVesconte	do	9	73 50
88,455	Laura Victoria	do	39	John Mauger	Arichat	9	55 57
38,516	Lady of the Lake	do	26	Stephen Dugas	River Bourgeois.	7	39 00
72,072	Lady Fougère	do	11	Docité Fougère	do	5	16 50
72,071	Lumen Diei	do	20	Urbain Sampson	do	7	30 00
46,082	Mary	Pt. Hawkesbury	43	D. Gruchy & Son	D'Escousse	9	61 27
36,435	Mary Stevens	Arichat	31	Alfred Poirier	Low. D'Escousse	9	46 50
38,459	Mary Ann	do	29	Désiré Poirier	do	8	43 50
38,413	Morning Star	do	25	Amable Pâté	River Bourgeois.	9	37 50
72,063	May Flower	do	12	M. Burke & M. Fougère	French Cove	5	18 00
38,522	Mary	do	23	Isaiah Boudrot	River Bourgeois.	5	29 56
72,047	Mary Moulton	do	26	Celestin Curdeau	do	7	39 00
69,109	Marcella Butler	Halifax	38	Daniel Fougère	do	7	50 66
83,100	Morning Star	Pt. Hawkesbury	13	Abraham Gerroir	Port Royal	2	19 50
72,048	Neptune	Arichat	26	Henry Sampson	River Bourgeois.	7	39 00
54,139	Ocean Belle	Halifax	20	A. J. Boyd	do	6	30 00
88,451	Port Royal	Arichat	12	Edward Leblanc	Port Royal	2	18 00
38,414	Philomen	do	26	Denis Dugas	River Bourgeois.	6	34 12
72,067	Philomen D	do	22	T. Digout & D. Dugas	do	7	33 00
38,462	Partners	do	25	Thomas Sampson	do	8	37 50
72,059	Richmond Queen	Halifax	37	Anselme Fougère	Poulamond	10	55 50
42,281	Renfrew	do	42	S. & F. Poirier	D'Escousse	9	59 85
88,452	R. Ferguson	Arichat	24	A. J. McDonald	Big Cove	7	36 00
36,521	Shooting Star	do	32	Wm. LeVesconte	D'Escousse	9	48 00
37,612	Sea Slipper	Lunenburg	41	Chas. Mauger	do	10	61 50
85,645	Sissie Belle	Halifax	40	S. & F. Poirier	D'Escousse	10	60 00
51,781	S. E. Cove	Arichat	54	Peter Campbell	Arichat	9	66 51
38,480	Two Brothers	do	32	Simon P. Landry	River Bourgeois.	9	48 00
61,990	Union	Halifax	20	Felix Burke	do	7	30 00
37,056	Victory	Arichat	37	Wm. LeVesconte	D'Escousse	10	55 50
38,523	Victoria	do	24	H. & P. Burke	French Cove	7	36 00
88,518	W. F. Elizabeth	Sydney	10	Samuel Burke	do	4	13 50

SHELBURNE COUNTY.

85,479	Alina	Shelburne	80	Churchill Locke	Lockeport	18	111 42
83,054	Ardella	do	80	Jonathan Locke	do	16	120 00
88,552	Afton	do	72	do	do	16	108 00
85,565	Alice Louise	Barrington	80	Arthur McGray	Cape Island	18	120 00
85,567	Annie Robertson	do	80	W. Wallace Kenney	Lockeport	13	97 12
90,866	Alice	Lunenburg	12	Walter Johnson	East Jordan	2	13 50
90,655	Annina	Yarmouth	12	Isaiah Smith	Wood's Harbor	6	15 74
90,426	Amanda	Barrington	38	B. C. Newell	Cape Island	11	57 00
94,632	A. C. Greenwood	Shelburne	14	T. D. Goodick *et al.*	Sand Point	4	18 90
85,490	Billy Browne	do	80	Enos Churchill	Lockeport	12	105 00
85,551	Blanche M. Thorburn	do	80	W. H. Thorbourne	Jordan Bay	20	120 00
66,722	C. Averett	Liverpool	19	A. Goreham	Wood's Harbor	2	17 81
61,905	Champion	do	14	J. W. Hopkins	Barrington	6	21 00

DETAILED STATEMENT of Fishing Bounties paid to **Vessels**, etc.—Nova Scotia—*Con.*

SHELBURNE COUNTY—*Concluded.*

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew.	Amount of Bounty Paid.
							$ cts.
83,492	Dessie	Liverpool	10	Amasa H. Fisk	Lockeport	5	15 00
75,624	Devina	Shelburne	52	Austen Locke	do	7	66 30
75,558	Emma B.	Barrington	80	Arch. Devine	Shag Harbor	20	120 00
83,043	Ella A. Downie	Shelburne	72	Enos Churchill	Lockeport	12	97 20
88,541	Edward T. Russel.	do	77	Austen Locke	do	16	112 10
77,603	Eldon C	Barrington	27	John E. Hopkins	Barrington	8	40 50
85,476	Fleetwing	Shelburne	11	E. Hammond	Jordan Bay	5	16 50
83,047	Festina Lente	do	80	Austen Locke	Lockeport	16	116 47
75,623	Grace Greenwood	do	80	Enos Churchill	do	16	108 00
80,831	Glide	Lunenburg	16	Jacob Lloyd	West Head	6	24 00
88,555	G. C. Kelly	Shelburne	80	W. W. Kenney	Lockeport	19	114 28
85,478	Glenora	do	75	John Locke	do	12	95 95
85,568	Georgie Harold	Barrington	80	W. W. Kenney	do	16	120 00
85,563	Helena Maud	do	80	Jno. H. Lyons, M.O.	Barrington	16	120 00
85,570	Hattie Dell	do	80	W. W. Kenny	Lockeport	18	106 95
90,689	John A. McGowan	Shelburne	80	John A. McGowan, jun.	Shelburne	14	102 00
61,566	John Purney	do	66	John Purney	do	11	85 80
61,572	John Halifax	do	63	O. Taylor	Port Latour	13	88 20
85,569	Jessie B	Barrington	35	Thos. D. Crowell	Shag Harbor	12	52 50
83,554	Jersey Lily	Shelburne	80	Enos Churchill	Lockeport	16	116 47
77,957	Kedron	Annapolis	21	Amasa H. Fisk	Lockeport	5	28 87
73,967	Katie	Liverpool	14	Wm. Doleman	do	6	21 00
77,761	Knight Templar	Shelburne	80	Enos Churchill	do	17	111 00
90,642	Komaroff	Yarmouth	10	D. B. Nickerson	Shag Harbor	3	11 25
74,051	Kate McKinnon	Barrington	73	Randall McKinnon	Cape Sable Isle.	14	105 85
54,114	Lone Star	Halifax	29	C. Locke & Co.	Lockeport	8	43 50
90,429	Lettie May	Barrington	10	Thos. Banks	Barrington	4	13 50
61,837	Laughing Waters	Yarmouth	32	Raymond Wilson	do	9	39 40
83,256	Marquis of Lorne	Annapolis	26	Amasa H. Fisk	Lockeport	8	39 00
85,484	Mellacoree	Shelburne	80	Geo. J. Thorbourn	Sand Point	20	120 00
75,560	Matilda	Barrington	80	N. J. Williams *et al*	Cape Island	10	97 50
85,480	M. & A. Morrison	Shelburne	80	Don Morrison	Jordan Bay	17	113 68
88,556	Mary	do	80	Jno. A. McGowan, jun.	Shelburne	16	120 00
77,746	Magellan Cloud	do	80	Wm. H. Thorbourne	Jordan Bay	17	116 66
85,488	Mabel Somers	do	80	Enos Churchill	Lockeport	16	120 00
88,543	Max O'Rell	do	80	Churchill Locke	do	16	110 52
85,477	Myrtle	Barrington	80	D. V. Kenney, M. O.	Cape Sable Is'd.	18	120 00
74,365	Nova Stella	Shelburne	52	Wm. Lloyd, jun.	Brighton	11	72 00
83,060	Nellie Morrow	do	80	C. Locke & Co.	Lockeport	16	120 00
83,052	Nautilus	do	11	James Roach	do	5	16 50
85,562	Oresa	Barrington	13	Alex. Smith	Blanche	5	19 50
55,830	Oregon	Shelburne	20	Jno. C. McGray	Cape Sable Is'd.	3	30 00
74,133	Pioneer	Yarmouth	80	Peter Kenney	do	13	103 30
75,628	Rover	Shelburne	80	Jonathan Locke	Lockeport	16	108 00
90,690	Sandalphon	do	80	C. Locke & Co.	do	12	94 26
69,694	Seven Brothers	Annapolis	38	J. N. Banks	Barrington	10	54 40
85,483	Sarah H. Seeton	Shelburne	80	C. Locke & Co.	Lockeport	14	114 00
37,523	Snow Drop	Liverpool	29	James Crowell	Port Latour	4	43 50
59,496	Thetis	Lunenburg	41	C. Locke & Co.	Lockeport	2	36 89
77,759	Thos. Robertson	Shelburne	66	Austen Locke	do	11	81 51
88,542	Three Bells	do	80	do	do	17	116 66
85,541	Willie M	Yarmouth	24	Isaac Kendrick	Barrington	6	30 00
85,487	Willie McGowan	Shelburne	80	J. A. McGowan, jun.	Shelburne	21	114 78
77,744	Whip-poor-Will	do	14	Jno. B. Harding	Lockepert	6	21 00
46,091	Wave	do	19	James Banks	Barrington	2	21 37
74,326	Zouave	Barrington	20	J. M. Shand	do	4	20 48

DETAILED STATEMENT of Fishing Bounties paid to **Vessels**, etc.—Nova Scotia—*Con.*

VICTORIA COUNTY.

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew.	Amount of Bounty Paid.
							$ cts.
90,487	Annie Eliza	Halifax	14	John Donovan	South Bay, Ingonish	3	21 00
92,593	Thomas Parnell	Sydney	10	Simon Hawley	South Bay, Ingonish	3	15 00

YARMOUTH COUNTY.

75,733	Alfred	Yarmouth	46	Parker, Eakins & Co.	Yarmouth	11	66 12
90,653	Alba	do	58	Thos. B. Flint	do	19	87 00
88,586	Alma	do	18	Maude Leblanc	Eel Brook	4	27 00
71,007	Alfarata	do	48	Mathurin D'Entremont	Pubnico	14	67 50
80,647	Annie M. Bell	do	64	James Amiro	West Pubnico	21	96 00
80,627	Annie D	do	71	Geo. D. D'Entremont	Pubnico	14	106 50
71,030	Arizona	do	80	S. D. D'Entremont	do	14	120 00
61,595	Annie Louisa	Shelburne	40	Harvey Goodwin	West Pubnico	17	60 00
88,598	Alph. B. Parker	Yarmouth	39	Elie Leblanc	Tusket Wedge	15	58 50
66,683	Ballarose	do	40	A. L. D'Entremont	Pubnico	11	53 55
74,320	Brenton	do	70	Parker, Eakins & Co.	Yarmouth	14	105 00
80,644	Beatrice	do	80	A. F. Stoneman & Co.	do	16	120 00
66,682	Brisk	do	67	Leon D'Eon	Pubnico	20	100 50
85,549	Byron	do	80	Byron Hines	do	17	113 68
69,217	Chlorus	do	57	A. F. Stoneman & Co.	Yarmouth	12	85 50
85,536	Circassian	do	80	W. M. Ryder	Argyle	16	120 00
80,605	Coral Leaf	do	71	Chas. E. Goodwin	Pubnico	16	100 58
90,883	Donald Cann	do	80	H. B. Cann	Yarmouth	18	120 00
90,871	Dora	do	63	A. F. Stoneman & Co.	do	19	94 50
66,679	Diploma	do	80	Louis D'Eon	West Pubnico	18	120 00
53,811	Electric Flash	Halifax	53	D. D'Entremont	Pubnico	19	79 50
85,552	Edith A	Yarmouth	80	Geo. D'Entremont	do	14	120 00
80,646	Emma S	do	80	Geo. Bates	Tusket Wedge	20	120 00
85,551	Ethel	do	80	J. H. Porter & Co.	do	16	120 00
75,720	Florence B. Parr	do	80	Parker, Eakins & Co.	Yarmouth	16	120 00
90,885	Georgiana	do	80	Hilaire Leblanc	Tusket Wedge	16	120 00
88,599	Guide	do	38	Thos. B. Flint	Yarmouth	15	55 21
85,554	Hazel Glen	do	80	Thos. J. Perry	do	18	120 00
90,647	Hattie Emeline	do	11	Peter A. Amiro	West Pubnico	4	16 50
75,867	Ida Peters	St. John, N.B.	32	Parker, Eakins & Co.	Yarmouth	9	45 60
85,560	Jacques	Yarmouth	58	Thos. B. Flint	do	15	79 74
80,641	Jonathan	do	68	David L. Amiro	Pubnico	17	102 00
71,005	Kelso	do	80	J. H. Porter & Co.	Tusket Wedge	16	120 00
80,624	Lima	do	12	N. B. Lewis	Yarmouth	4	16 20
61,587	Lucretia Jane	do	80	Thos. B. Flint	do	17	111 00
51,972	Lydia Ryder	do	57	Ls. P. D'Entremont	Pubnico	20	85 50
80,614	Louise	do	80	J. H. Porter & Co.	Tusket Wedge	19	117 00
80,632	Lumen	do	30	do	do	13	45 00
90,888	Laura J	do	53	Chas. M. Boudreau	do	19	79 50
90,887	L'Etoile	do	48	J. H. Porter & Co.	do	14	69 60
85,539	Maggie Jane	do	12	Jacob Foote	Sandford	2	12 60
74,339	Maitland	do	44	H. & N. B. Lewis	Yarmouth	16	66 00
75,550	Martino	Barrington	12	Aug. A. Amiro	L. E. Pubnico	6	16 71
61,510	Mansimalo	Shelburne	50	Remi D'Entremont	West Pubnico	18	75 00
80,648	Maria	Yarmouth	80	Byron Hines	Pubnico	20	120 00
88,596	M. A. Louis	do	64	Marc A. Surette	West Pubnico	18	91 20
74,330	Nokomis	do	68	Thos. B. Flint	Yarmouth	14	102 00
90,659	N. A. Laura	do	59	Julien D'Entremont	West Pubnico	18	84 06
85,553	Onyx	do	80	Parker, Eakins & Co.	Yarmouth	18	120 00
80,645	Opal	do	80	do	do	16	120 00
66,675	Olika	do	54	J. H. Porter & Co.	Tusket Wedge	17	81 00

DETAILED STATEMENT of Fishing Bounties paid to **Vessels**, etc.—Nova Scotia.—*Con.*

YARMOUTH COUNTY—*Concluded.*

Official Number.	Name of Vessel.	Port of Entry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew.	Amount of Bounty Paid.
90,877	Partridge	Yarmouth	47	Thos. B. Flint	Yarmouth	11	67 56
74,332	Proditor	do	54	Zacharie D'Eon	West Pubnico	17	78 75
80,628	Roseneath	do	80	Byron Hines	Pubnico	17	120 00
74,323	Regina	do	57	A. C. D'Entremont	West Pubnico	15	78 36
71,031	Sarah J. Killam	do	51	A. F. Stoneman & Co	Yarmouth	14	71 71
88,589	Sandford	do	20	Abram Thurston	Sandford	3	21 42
57,150	Salvador	do	53	Ambroise D'Eon	West Pubnico	16	75 08
90,648	Stranger	do	15	Benjamin Hines	do	2	14 05
75,724	Sea Foam	do	75	J. H. Porter & Co	Tusket Wedge	17	112 50
85,535	Sigefroi	do	40	do	do	14	58 00
90,881	Tiger	do	57	Thos. B. Flint	Yarmouth	14	85 50
88,597	Uncle Sam	do	80	Geo. D. D'Entremont	Pubnico	16	120 00
75,749	Vivid	do	43	Parker, Eakins & Co	Yarmouth	16	64 50
66,685	Wide Awake	do	77	A. F. Stoneman & Co	do	14	115 50
90,882	Will-o-the-Wisp	do	51	Anth'y M. D'Entremont	West Pubnico	19	76 50
61,921	W. E. Wier	do	41	A. F. Stoneman & Co	Yarmouth	10	48 83

DETAILED STATEMENT of Fishing Bounties paid to **Vessels**, etc.—*Continued.*

PROVINCE OF NEW BRUNSWICK.

CHARLOTTE COUNTY.

Official Number.	Name. of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew.	Amount of Bounty Paid.
							$ cts.
83,469	Austin, P.	St. Andrew's	12	Lincoln Richardson	Deer Island	4	18 00
88,288	Annie May	do	11	Lewis Frankland	White Head	2	13 75
83,478	Argyle	do	10	Joseph Murphy	Le Tête	2	11 24
42,096	Ada	Digby, N.S.	29	W. B. Guptill	Grand Manan	8	43 50
92,517	Ada	St. Andrew's	10	Wm. Philips	Wilson's Beach	2	12 50
59,311	Blooming Rose	do	19	Aaron Cooke	Deer Island	5	28 50
75,599	Blue Jay	Digby, N.S.	14	Eben Gaskill	North Head	3	16 80
80,888	B. R. Stevenson	St. Andrew's	17	A. Lamb *et al.*	St. Andrew's	3	25 50
88,409	Carrie	Digby, N.S.	12	James McLeese	Back Bay	1	10 80
35,338	Caroline	St. Andrew's	18	H. Stuart	Deer Island	5	27 00
59,375	Cadet	do	13	Chas. Savage	Campobello	3	19 50
88,290	Crusoe	do	13	James Starkey	St. Andrew's	3	19 50
92,519	Catherine	do	13	B. McKenzie	Le Tête	2	14 62
92,503	Defiance	do	17	Frank Calder	Campobello	4	25 50
74,326	Dreadnaught	Yarmouth	19	Wm. Mathews	Wilson's Beach	4	28 50
92,515	Dispute	St. Andrew's	13	E. R. Patch	Campobello	2	19 50
88,280	E. B. Lane	do	12	T. H. McConnell	L'Etang	3	18 00
88,281	Eastern State	do	22	N. W. Dick *et al.*	Back Bay	2	27 50
59,373	E. M. Oliver	do	14	J. & W. J. Oliver	do	2	14 70
92,505	Edith B	do	47	T. & L. Richardson	Deer Island	8	63 44
80,803	Exenia	Windsor, N.S.	18	Wm. F. Parker *et al.*	Beaver Harbor	4	27 00
59,391	Eliza Ann	St. Andrew's	12	Geo. Morse	White Head	2	13 50
77,968	Empress	do	14	G. & M. Caffary	Mace's Bay	3	18 37
80,882	Ella Mable	do	14	D. Calder	Campobello	3	21 00
88,286	Eagle	do	11	Joseph Richardson	Deer Island	3	16 50
73,965	Etta	Lunenburg, N.S.	28	Chas. Dixon	North Head	3	33 60
92,516	Emma	St. Andrew's	22	Wm. Robert & Jas. Shaw	Lepreaux	4	27 50
80,001	Florence	St. John	15	S. L. Justason	Pennfield	5	22 50
59,400	Foam Belle	St. Andrew's	10	T. Ellsworth	do	4	15 00
88,276	Falcon	do	12	Wm. Brown	Wilson's Beach	3	15 75
83,480	Fred. Taylor	do	13	Joseph Boyd	do	3	19 50
92,511	Fleetwing	do	11	A. Mathews	White Head	2	12 37
77,963	Freeman Colgate	do	26	Geo. English	Deer Island	6	39 00
57,131	Forest Flower	Yarmouth, N.S.	26	Norman Ray		5	39 00
59,393	Fannie	St. Andrew's	12	James Greenlaw	Deer Island	4	18 00
51,748	Frank L. Dickson	do	18	E. A. Grearson	St. George	4	24 30
59,396	Gertie Westbrook	do	10	James Cline	Deer Island	4	15 00
92,508	Grey Eagle	do	13	N. Mitchell	Campobello	3	19 50
37,315	Genetta	do	13	G. D. Grimmer	St. Andrew's	5	19 50
83,463	Havelock	do	33	Wm. James	Wilson's Beach	5	49 50
59,394	Hattie	do	10	Chas. Harkins	Dipper Harbor	3	15 00
51,738	Ita	do	15	M. Nodding	Beaver Harbor	3	22 50
51,965	John E. Dennis	do	10	D. M. Foster	Grand Harbor	2	10 50
83,464	Little Annie	do	19	Jacob Cook	Le Tête	4	23 74
88,273	Lillian E	do	13	Andrew McGee	Back Bay	2	16 25
59,342	Lizzie S. McGee	do	14	do	do	5	19 25
59,395	Little Minnie	do	11	Geo. Douglas	Le Tête	3	12 36
83,474	Letter B	do	12	Sophia Cook	do	2	15 00
59,388	Letitia	do	10	F. Johnson	Deer Island	3	15 00
83,472	Linden	do	12	O. G. Brown	Wilson's Beach	2	18 00
88,407	Linnet	Digby, N.S.	15	Alva Brown	do	3	22 50
77,965	Lydia B	St. Andrew's	12	J. M. Calder	Campobello	3	18 00
59,321	Little Nell	do	21	Wm. McLellan, jr	do	6	31 50
75,598	Lizzie Jane	Digby, N.S.	18	Gilbert Green	Deer Island	5	24 75
80,881	Lena May	St. Andrew's	18	Geo. Kirkpatrick	Wilson's Beach	4	27 00
83,465	Look Out	do	48	A. W. Ingersoll	Grand Harbor	6	72 00
59,399	Leona	do	12	D. Lasley & D. French	Back Bay	3	18 00
59,326	Maud Holmes	do	21	Jacob Cook	Le Tête	4	26 24

DETAILED STATEMET of Fishing Bounties paid to **Vessels**, etc.—New Brunswick—*Continued.*

CHARLOTTE COUNTY—*Concluded.*

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew.	Amount of Bounty Paid.
							$ cts.
38,109	Mary	Yarmouth, N.S.	17	James Thompson	Black Harbor	3	25 50
92,514	Maggie Jane	St. Andrew's	10	Mrs. V. A. Cook	Mascarene	2	11 24
88,277	Maggie Jane	do	18	S. B. & A. A. Cross	Beaver Harbor	5	27 00
88,271	Magellan Cloud	do	20	Simon Brown	Wilson's Beach	4	27 00
59,125	Mount Whatley	St. John	28	Hugh Belmore	Dipper Harbor	4	42 00
92,509	Mary Jane	St. Andrew's	13	A. A. Calder	Campobello	4	19 50
88,402	Mizpah	Digby, N.S.	53	Eben Gaskill	North Head	4	55 63
92,501	Maby	St. Andrew's	11	John Kelly	White Head	3	16 50
74,337	May	Shelburne, N.S.	28	Alva B. Small	Woodwards Cove	6	36 74
77,970	Mary Emeline	St. Andrews	18	Calvados Brown	Wilson's Beach	3	27 00
77,967	Naomi	do	14	Wm. James	do	3	21 00
75,716	Onward	Yarmouth, N.S.	10	John Watt	North Head	3	15 00
52,174	Pilot	St. John	12	W. Cline, sr.	Deer Island	2	18 00
59,383	Pilgrims Progress	St. Andrews	16	Arther Porter	Wilson's Beach	3	24 00
92,518	Peril	do	18	M. Eldridge and G. Dickson	Beaver Harbor	2	22 50
75,591	Rise and Go	do	16	Wm. Sirls	Campobello	4	24 00
42,081	Randolph P	Digby, N.S.	15	John Peters	do	3	18 00
75,547	River Rose	Barrington, N.S.	13	E. C. Bowers	Westport, N.S.	3	19 50
88,284	Sea Foam	St. Andrews	13	D. & E. Leavitt	Back Bay	3	17 06
88,279	Senator	do	33	Wm. Tinker	Deer Island	4	49 50
88,287	Satellite	do	26	M. Eldridge and E. Wadlin	Beaver Harbor	5	39 00
88,272	Simeon H. Bell	do	14	Edward Mathews	Le Tête	4	21 00
59,357	Silver Bell	do	13	Peter Malloch	Wilson's Beach	4	19 50
59,387	Telephone	do	19	Joseph McGee	Back Bay	5	28 50
88,414	Trumpet	St. John	20	A. W. Holmes	Beaver Harbor	4	30 00
92,504	Tiger	St. Andrews	15	Thos. Mitchell	Campobello	3	22 50
88,282	Veritas	do	10	Enoch Mathews	Le Tête	2	12 50
83,468	Village Belle	do	15	Allan P. Dixon	North Head	3	18 00
35,331	Victory	do	16	Frank Campbell	Dipper Harbor	3	24 00
77,969	Wave Queen	do	11	Wm. McMahon	Le Tête	4	16 50
92,512	Water Witch	do	10	Geo. R. Batson	Campobello	3	15 00
83,427	Zoulu	Weymouth, N.S.	12	Eben Gaskill	North Head	3	18 00

GLOUCESTER COUNTY.

72,099	Adelina	Chatham	12	Auguste Poulin	Lamèque	4	18 00
72,079	Betsy	do	13	Cyrenus Gionet	Shippegan	3	19 50
61,431	Bee	do	11	Paul Noel	Lamèque	3	16 50
83,102	Evangeline	do	74	K. F. Burns	Bathurst	13	107 03
61,446	Esperance	do	10	Olivier Robicheau	Pokemouche	3	15 00
61,437	Flying Fish	do	11	Elie Chiasson	Lamèque	3	16 50
61,445	Flavie	do	13	Théophile Duguay	do	3	19 50
85,699	Four Sisters	do	10	Nazaire Boudreau	Maisonette	2	12 50
61,425	Hope	do	13	R. Robin	Caraquet	4	19 50
	Jean	do	13	D. Gallien	do	3	19 50
88,669	Morning Star	do	12	Gustave Gionet	Pokemouche	3	18 00
85,692	Mary	do	11	J. N. LeBoutillier	Caraquet	3	16 50
61,447	Merida	do	13	André Aché, sen	Lamèque	3	17 06
92,403	Marie	do	25	Ubalde Landry	Grand Anse	4	37 50
72,077	Mary	do	12	Moses Duguay	Shippegan	3	18 00
61,442	Marie Cécile	do	15	Olivier Duguay	Lamèque	4	22 50
72,100	Marie	do	11	Onésime Chiasson	Lamèque	3	16 50
72,076	Providence	do	12	Eutrope Duguay	Shippegan	2	15 00
61,406	Reward	do	11	J. N. LeBoutillier	Caraquet	2	12 37
61,438	Rosane	do	13	Lauge Duguay	Little Lamèque	4	19 50
85,696	Rose	do	11	Marin Basque	Tracadie	4	16 50

DETAILED STATEMENT of the Fishing Bounties paid to **Vessels**, etc.—New Brunswick—*Concluded.*

GLOUCESTER COUNTY—*Concluded.*

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew.	Amount of Bounty Paid.
							$ cts.
92,404	Rosa	Chatham	17	Octave Aché	Lamèque	4	25 50
74,401	Sara	do	11	Nazaire Noel	do	3	16 50
92,408	Sarah A. W	do	15	R. J. Wilson	Miscou Island	3	22 50
				KENT COUNTY.			
54,104	Annie C. Brown	Halifax, N.S.	59	Oswald Smith	Richibucto	5	60 05
55,829	Emma McMillan	Pictou, N.S.	20	Rufus Palmer	Kingston	4	30 00
61,414	Frederick William	Chatham	21	Henry Irving	Richibucto	2	26 25
83,105	Katie Bell	Richibucto	11	John Bell	do	3	16 50
35,548	Morning Star	Chatham	30	A. Arseneau	do	5	38 56
83,104	Minnie Long	Richibucto	20	Wm. Long, sen	do	3	30 00
71,308	Sea Mouse	do	10	John Doucett	Kingston	3	13 12
61,411	Telegraph	do	20	Wm. Irving	Richibucto	3	30 00
				NORTHUMBERLAND COUNTY.			
61,417	Belle	Chatham	12	P. S. Bremner	Chatham	3	18 00
74,368	Maggie Roach	Shelburne, N.S.	44	W. S. Loggie	do	7	50 78
61,373	Maria	Chatham	28	do	do	9	35 56
66,724	Nettie Cole	Liverpool, N.S.	13	A. & J. Adams	Neguac	2	19 50
78,044	Princess Louise	Chatham	21	R. J. Walls	Chatham	5	31 50
				RESTIGOUCHE COUNTY.			
61,401	Venus	Chatham	19	Joseph Windsor	Dalhousie	4	28 50
				ST. JOHN COUNTY.			
88,270	Alice May	St. John	10	Robt. Thompson, sen	Musquash	3	15 00
72,192	Ada	do	19	Wm. J. Ewart	Pisarinco	4	28 50
80,093	Anna K	do	14	Wm. Spence	Portland	3	21 00
79,977	Amanda Green	do	15	Samuel Hutton	Carleton	3	22 50
80,072	Buena Vista	do	14	John McNulty, sen	Musquash	3	21 00
74,308	Bald Eagle	Yarmouth, N.S.	14	James Wilson	Portland	3	21 00
85,972	Dove	St. John	11	Samuel McGuire	Musquash	5	16 50
88,253	E. B. Colwell	do	19	A. N. and W. A. Harned	Carleton	4	28 50
66,926	Emma	do	13	David Thompson	Chance Harbor	4	16 24
57,181	Hattie	Windsor, N.S.	13	S. Galbraith and R. Knox	Pisarinco	4	19 50
83,259	Hettie May	Annapolis, N.S.	15	John Butler	Musquash	5	22 50
88,266	Lizzie Young	St. John	12	Nathaniel Young	do	3	14 40
88,261	Little Joe	do	18	Joseph O'Brien	Carleton	4	27 00
52,159	Mary E	do	21	F. Buchanan	do	4	31 50
59,322	Sea Flower	do	11	James Thompson	Musquash	2	13 75
59,370	Sparkling Billow	St. Andrews	25	J. W. Belyea	Carleton	4	33 75
72,973	Sea Breeze	Digby, N.S.	13	J. J. Graham and D. Tolan	Musquash	5	19 50
59,156	Tom	St. John	14	Peter Boyle	do	3	21 00
42,087	Two Sisters	Digby, N.S.	14	Thomas Wilson, sen	Pisarinco	3	21 00
72,321	Widgeon	St. John	10	James Kennedy	St. John	3	15 00
88,264	Walter J. Clarke	do	20	Jno. M. Christopher *et al*	Carleton	5	30 00

DETAILED STATEMENT of Fishing Bounties paid to **Vessels**, etc.—*Continued.*

PROVINCE OF PRINCE EDWARD ISLAND.

KING'S COUNTY.

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew.	Amount of Bounty Paid.
							$ cts.
66,428	Albert	Charlottetown	40	Benj. Herring	Murray Harbor.	6	52 50
66,242	Amorette	do	18	Peter Roberts	do	5	27 00
69,132	Belle of the Bay	Guysboro', N.S.	20	J. Kirby & W. Grant	do	3	21 42
74,141	Belle	do	31	A. Jackson	do	9	44 17
92,675	Can't Help It	Pictou, N.S.	39	John Herring	do	5	47 52
38,335	Elizabeth	Arichat, N.S.	17	Benj. Delorey	Georgetown	1	14 87
83,196	Ethel Blanche	Pictou, N.S.	12	R. Cahoon	Murray Harbor.	4	15 00
92,457	Elmer E. Hawes	Charlottetown	40	James Hume	do	13	56 00
83,198	Harriet	Pictou, N.S.	27	Wm. Reynolds	do	7	37 96
88,644	Hattie	Charlottetown	18	Henry Dicks	do	6	27 00
75,481	Julia Ward	do	39	S.Sencabaugh&G.Dunn	do	7	46 30
92,458	Jubilee	do	76	M. McDonald	Georgetown	10	92 60
75,566	Julia A.	Lunenburg, N.S.	15	John McKinnon	Murray Harbor.	5	20 62
75,882	Lord McDonald	Charlottetown	15	David Cahoon	do	2	15 75
88,230	Morning Light	Halifax, N.S.	28	Robt. N. Cox	Morell	11	40 25
90,639	Morrel	Charlottetown	16	E. D. Delorey	Georgetown	5	24 00
80,937	Montague	do	16	M. Jackson	Murray Harbor.	4	21 60
83,095	Mary Margaret	Pt. Hawkesbury, N.S.	17	John Cahoon	do	4	25 50
74,160	Sea Bird	Charlottetown	20	John Hyde	do	3	24 00

PRINCE COUNTY.

72,081	Annie	Chatham, N.B.	13	Jno. McDonald	Campbelton	2	11 39
71,310	Black Watch	Charlottetown	23	Jno. P. Brennan.	Alberton	4	22 98
82,086	Charlie	do	64	J. H. Myrick & Co	Tignish	15	93 00
90,492	C. W. Redmond	Halifax, N.S.	80	Jno. Agnew	Alberton	7	86 25
64,867	Daring	Charlottetown	39	Walter Matheson	Campbelton	9	58 50
88,642	Express	do	46	Jno. Champion	Alberton	13	69 00
90,636	Gertie	do	42	Benj. Rogers	Tignish.	5	42 75
80,946	Janet A	Chatham, N.B.	29	Donald Handrahan	do	4	28 47
59,663	Lettie	Charlottetown	57	J. H. Myrick & Co.	do	15	85 50
66,948	Lois	do	67	Jno. A. Matheson	Campbelton	7	75 37
88,654	Mamie	do	15	Patk. Doyle	Tignish	5	22 50
92,455	Mikado	do	38	Terrance Farrell, jun	Alberton	7	43 83
77,619	Milford Guy	do	60	James S. Gordon	do	12	83 56
59,717	Sylvanus McDonald	do	45	J. H. Myrick & Co	Tignish	7	51 90

QUEEN'S COUNTY.

92,464	Eliza M	Charlottetown	18	Wm. Bell	New London	4	27 00
92,466	G. H. Gardiner	do	17	G. H. Pursey	North Rustico	4	25 50
92,467	Golden Ball	do	11	James Hamilton	Margate	4	16 50
74,015	Kohinoor	do	77	James E. Grant	Charlottetown	15	111 90

DETAILED STATEMENT of Fishing Bounties paid to **Vessels**, etc.—*Concluded.*

PROVINCE OF QUEBEC.

GASPÉ COUNTY.

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner or Managing Owner.	Residence.	No. of Crew.	Amount of Bounty Paid.
							$ cts.
33,622	Admiration	Gaspé	60	Joseph Tripp	Gaspé Basin	16	90 00
55,642	Delaney	Magdalen Isl'ds.	44	Camille Delaney	House Harbor	8	55 00
71,357	Emma Gidney	Halifax, N.S.	48	Damien Devaux	Aubert	8	64 80
85,391	Esperance	Magdalen Isl'ds.	31	Jean Bourgeois *et al*	do	7	43 59
77,604	E. D. Myra	Lunenburg, N.S.	43	P. P. Delaney	House Harbor	11	61 81
85,393	Formosa	Magdalen Isl'ds.	43	do	do	11	61 81
73,029	F. P. T	do	41	Camille Delaney	do	9	53 79
77,612	Gold Hunter	do	41	Edward Bourque	do	10	61 50
59,457	Highland Lass	Lunenburg, N.S.	15	Dominique Boudreau	Havre Aubert	4	22 50
85,395	Kate	Magdalen Isl'ds.	11	Herbert Taker	Grosse Isle	2	12 37
73,494	Marie Dolorosa	do	44	André Devaux	Aubert	7	56 10
73,021	Marie Anne	do	46	J. Arseneau, and Wm. Terrieau	House Harbor	9	60 36
73,025	Marie Euphrosyne	do	39	N. Arseneau	do	11	56 06
75,577	Mary Ann Bell	Lunenburg, N.S.	33	Jno. Arseneau	do	10	49 50
73,491	Mary Jane	Magdalen Isl'ds.	47	N. Arseneau	do	11	67 56
73,493	Marie Joseph	do	56	Philippe Gaudin	do	10	77 00
73,024	Marie Enesie	do	47	W. G. Leslie	Grindstone	12	70 50
38,351	Nancy	Arichat, N.S.	16	T. Cormier *et al*	Aubert	4	24 00
54,082	Pheasant	Magdalen Isl'ds.	32	J. N. Arseneau	Grindstone	8	43 20
73,028	Richard B	do	32	Wm. G. Leslie	do	9	45 60
73,492	Thirza	do	14	T. Larade, and E. Gallant	Magdalen Isl'ds.	6	21 00

SAGUENAY COUNTY.

74,270	Amarilda	Quebec	24	L. & M. Pineau	Bic	3	36 00
42,436	Amelia	Gaspé	50	P. Cormier & Bros.	Esquimaux Pt	11	75 00
57,742	Acara	Halifax, N.S.	30	F. Jomphe	do	7	45 00
59,468	Busy	Quebec	39	Blais & Vigneau	do	8	55 25
83,370	C. M. G. P.	do	46	Geo. Picard	do	9	65 55
61,966	D. Cronan	Halifax, N.S.	40	P. Lemarquand	do	8	60 00
66,028	Emerillon	Quebec	14	Aug. Michaud	Isle Verte	2	21 00
92,336	Esperance	do	28	Henry Cormier	Natashquan	3	42 00
59,909	Elizabeth	do	27	Luke Cormier	Esquimaux Pt	8	40 50
80,754	Eugenie	do	48	Vigneau & Blais	do	6	72 00
85,754	Florida	do	26	H. Bourque	Natashquan	6	39 00
75,679	Gleaner	do	41	B. Landry & Sons	Esquimaux Pt	10	61 50
85,750	H. B	do	57	H. Boudreau	do	7	85 50
85,753	Jaon	do	46	Dom. Cormier	do	10	65 86
42,435	Labrador	Gaspé	43	Placide Doyle	do	8	64 50
77,868	Léodore	Quebec	39	F. X. Corriveau	do	8	58 50
55,912	Marie Louise	do	13	Pierrie Ouelette	Quebec	4	19 50
69,584	do	do	23	H. Vigneault *et al*	Natashquan	4	34 50
42,434	Marguerite	Gaspé	27	Michel Giasson	Esquimaux Pt	7	40 50
69,382	Marie du Sacré Cœur	do	46	O. Turbis	do	8	69 00
69,380	Marie Anne	do	35	D. Landry	do	8	52 50
77,866	Pioneer	do	39	Lebrun & Picard	do	9	56 52
42,437	Progress	do	52	Boudreau & Leblanc	do	7	78 00
75,445	Phœnix	do	28	P. Vigneau & Bros.	do	7	42 00
73,026	Ste. Anne	Magdalen Isl'ds.	20	F. X. Corriveau	do	5	30 00
75,675	Sancta Maria	Quebec	20	H. Landry	Natashquan	4	30 00
75,680	Sea Star	do	52	J. Poirier & S. Boudreau	do	4	78 00
80,753	Stella Maris	do	51	L. Cummings & Bros.	Esquimaux Pt	10	73 02
69,591	Ste. Marie	do	37	A. Sherrer	do	8	55 50
69,659	St. Joseph	do	18	Turgeon & Corriveau	do	6	27 00

The following Vessel claim for 1887, held in abeyance, was paid in 1888-89.

PROVINCE OF NOVA SCOTIA.

HALIFAX COUNTY.

Official Number.	Name of Vessel.	Port of Registry.	Tonnage.	Name of Owner.	Residence.	No. of Crew.	Amount of Bounty Paid.
85,653	Mary O'Dell.....	Halifax	10	James L. Richardson ..	Indian Harbor..	2	20 00

Comparative Statement of Fishing Bounties Paid, from 1882 to 1888 inclusive.

Number.	Province.	County.	1882.			1883.			1884.		
			Vessels.	Boats.	Total.	Vessels.	Boats.	Total.	Vessels.	Boats.	Total.
			Amount.	Amount.		Amount.	Amount.		Amount.	Amount.	
			$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
1	Nova Scotia	Annapolis	472 00	1,998 00	2,470 00	838 00	1,207 50	2,045 50	648 00	1,503 50	2,151 50
2		Antigonish		840 00	840 00		482 50	482 50		799 50	799 50
3		Cape Breton	294 00	5,167 00	5,461 00	436 00	2,853 50	3,289 50	383 00	3,909 00	4,292 00
4		Colchester							64 00		64 00
5		Cumberland		20 00	20 00					7 50	7 50
6		Digby	1,436 00	4,118 66	5,554 66	2,652 00	2,182 50	4,834 50	3,322 84	2,234 50	5,557 34
7		Guysboro'	2,380 73	7,913 75	10,294 48	2,914 00	4,645 00	7,559 00	3,371 90	6,485 50	9,857 40
8		Halifax	3,599 50	11,118 31	14,717 81	6,020 00	6,080 50	12,100 50	5,834 00	7,898 00	13,732 00
9		Inverness	950 00	5,432 00	6,382 00	572 00	3,422 50	3,994 50	1,208 00	4,522 00	5,730 00
10		King's	46 00	125 00	171 00	146 00	157 50	303 50	196 00	70 50	266 50
11		Lunenburg	15,161 03	3,112 00	18,273 03	17,658 00	1,850 00	19,508 00	19,648 24	3,162 00	22,810 24
12		Pictou	202 00	95 00	297 00	202 00	120 00	322 00	177 76	107 50	285 26
13		Queen's	1,638 00	1,917 00	3,555 00	1,826 00	810 00	2,636 00	2,408 00	836 50	3,244 50
14		Richmond	3,853 15	7,998 50	11,851 65	3,558 00	4,225 00	7,783 00	3,266 58	6,325 00	9,591 58
15		Shelburne	7,294 00	4,332 00	11,626 00	8,744 00	2,326 50	11,070 50	8,928 27	2,781 50	11,709 77
16		Victoria	284 00	4,861 00	5,145 00	492 00	2,830 50	3,322 50	60 00	4,045 50	4,105 50
17		Yarmouth	7,825 09	1,615 00	9,440 09	9,486 00	695 00	10,181 00	9,758 00	971 50	10,729 50
18		Totals	45,435 50	60,663 22	106,098 72	55,544 00	33,888 50	89,432 50	59,274 59	45,659 50	104,934 09
19	New Brunswick	Charlotte	2,140 00	5,641 00	7,781 00	2,380 00	2,830 00	5,210 00	2,792 00	3,035 00	5,827 00
20		Gloucester	422 00	5,368 00	5,790 00	492 00	3,568 50	4,060 50	508 00	4,799 00	5,307 00
21		Kent	768 00	965 00	1,733 00	266 00	1,197 50	1,463 50	246 00	764 50	1,010 50
22		Northumberland		45 00	45 00	68 00	52 50	120 50	66 00	68 00	134 00
23		Restigouche	28 00		28 00	52 00		52 00			
24		St. John	984 00	591 00	1,575 00	861 20	587 50	1,448 70	956 00	260 00	1,216 00
25		Westmoreland		45 00	45 00		40 00	40 00		81 50	81 50
26		Totals	4,342 00	12,655 00	16,997 00	4,119 20	8,276 00	12,395 20	4,568 00	9,008 00	13,576 00

COMPARATIVE STATEMENT of Fishing Bounties Paid, from 1882 to 1888, inclusive.

Number.	Province.	County.	1882. Vessels. Amount.	1882. Boats. Amount.	1882. Total.	1883. Vessels. Amount.	1883. Boats. Amount.	1883. Total.	1884. Vessels. Amount.	1884. Boats. Amount.	1884. Total.
			$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
27	P. E. Island	King's	252 00	5,024 00	5,276 00	293 14	2,790 50	3,083 64	475 44	3,028 00	3,503 44
28		Prince	316 00	6,709 00	7,025 00	418 00	3,429 50	3,847 50	520 00	3,642 00	4,162 00
29		Queen's	210 00	3,626 00	3,836 00	96 00	1,550 00	1,646 00	65 02	1,473 50	1,538 52
30		Totals	778 00	15,359 00	16,137 00	807 14	7,770 00	8,577 14	1,060 46	8,143 50	9,203 96
31	Quebec	Bonaventure		8,945 00	8,945 00		3,846 50	3,846 50		5,508 00	5,508 00
32		Gaspé	2,070 00	17,899 75	19,969 75	2,152 00	9,302 50	11,454 50	1,906 00	13,879 50	15,785 50
33		Rimouski									
34		Saguenay	2,350 00	1,773 00	4,123 00	2,320 01	2,319 00	4,639 01	2,023 93	4,687 50	6,711 43
35		Temiscouata		15 00	15 00						
36		Totals	4,420 00	28,632 75	33,052 75	4,472 01	15,468 00	19,940 01	3,929 93	24,075 00	28,004 93

RECAPITULATION.

37	Nova Scotia		45,435 50	60,663 22	106,098 72	55,544 00	33,888 50	89,432 50	59,274 59	45,659 50	104,934 09
38	New Brunswick		4,342 00	12,655 00	16,997 00	4,119 20	8,276 00	12,395 20	4,568 00	9,008 00	13,576 00
39	P. E. Island		778 00	15,359 00	16,137 00	807 14	7,770 00	8,577 14	1,060 46	8,143 50	9,203 96
40	Quebec		4,420 00	28,632 75	33,052 75	4,472 01	15,468 00	19,940 01	3,929 93	24,075 00	28,004 93
41		Totals	54,975 50	117,309 97	172,285 47	64,942 35	65,402 50	130,344 85	68,832 98	86,886 00	155,718 98

COMPARATIVE STATEMENT of Fishing Bounties Paid, from 1882 to 1888, Inclusive.

Number.	1885.			1886.			1887.			1888.			Grand Total.
	Vessels. Amount.	Boats. Amount.	Total.	Vessels. Amount.	Boats. Amount.	Total.	Vessels. Amount.	Boats. Amount.	Total.	Vessels. Amount.	Boats. Amount.	Total.	
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
1	430 08	1,180 00	1,610 08	431 60	1,063 50	1,495 10	305 27	1,162 00	1,467 27	217 01	1,153 50	1,370 51	12,609 96
2	.....	982 50	982 50	.....	832 00	832 00	.....	924 50	924 50	.....	1,063 50	1,063 50	5,924 50
3	210 00	4,012 50	4,222 50	392 00	3,765 00	4,157 00	374 14	3,600 00	3,974 14	423 33	3,618 00	4,041 33	29,437 47
4	74 00	.....	74 00	74 00	.....	74 00	74 00	.....	74 00	85 50	.....	85 50	371 50
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27 50
6	3,036 02	1,993 00	5,029 02	2,131 79	1,924 50	4,056 29	2,671 34	1,582 50	4,253 84	1,696 68	1,749 50	3,446 18	32,731 83
7	3,312 53	7,129 50	10,442 03	2,936 90	7,521 00	10,457 90	2,210 58	7,963 50	10,174 08	1,289 71	8,274 50	9,564 21	68,349 10
8	5,984 77	8,398 00	14,382 77	4,947 02	8,200 50	13,147 52	5,097 61	8,333 50	13,431 11	3,809 99	7,806 00	11,615 99	93,127 70
9	884 00	4,913 50	5,797 50	1,294 12	5,265 00	6,559 12	1,582 88	5,091 00	6,673 88	1,247 90	5,432 00	6,679 90	41,816 90
10	54 00	185 50	239 50	96 00	297 50	393 50	218 00	242 00	460 00	123 45	272 50	395 95	2,229 95
11	17,315 34	2,947 00	20,262 34	16,755 64	3,122 00	19,877 64	16,154 33	3,751 50	19,905 83	13,893 81	3,794 00	17,687 81	138,324 89
12	154 00	132 00	286 00	156 00	94 50	250 50	.....	130 00	130 00	.....	110 50	110 50	1,681 26
13	1,854 00	1,190 50	3,044 50	1,814 00	967 00	2,781 00	1,650 00	1,212 50	2,862 50	1,495 82	1,174 00	2,669 82	20,793 32
14	3,164 49	7,046 00	10,210 49	2,650 00	6,941 00	9,591 00	2,762 86	7,704 00	10,466 86	2,390 65	8,108 50	10,499 15	69,993 73
15	9,198 00	3,201 50	12,399 50	7,880 67	3,072 00	10,952 67	6,678 62	3,687 00	10,365 62	5,193 59	3,842 50	9,036 09	77,160 15
16	166 00	4,487 00	4,653 00	222 20	4,599 50	4,821 70	88 00	4,600 50	4,688 50	36 00	4,963 50	4,999 50	31,735 70
17	9,415 50	968 50	10,384 00	8,513 60	829 00	9,342 60	8,539 40	1,230 50	9,769 90	5,661 46	858 50	6,519 96	66,367 05
18	55,252 73	48,767 00	104,019 73	50,295 54	48,494 00	98,789 54	48,407 03	51,215 00	96,622 03	37,564 90	52,221 00	89,785 90	692,682 51
19	2,508 25	3,937 00	6,445 25	2,579 67	4,246 00	6,825 67	3,292 65	4,681 50	7,974 15	2,113 50	4,447 50	6,561 00	46,624 07
20	452 00	5,876 00	6,328 00	516 00	6,462 00	6,978 00	618 75	7,136 00	7,754 75	537 46	8,212 50	8,749 96	44,968 21
21	184 00	1,309 50	1,493 50	206 00	1,473 50	1,679 50	370 00	1,728 50	2,098 50	244 48	1,770 50	2,014 98	11,493 48
22	180 00	80 50	260 50	592 00	80 50	672 50	445 00	229 00	674 00	155 34	73 00	228 54	2,134 84
23	.....	.....	.....	28 00	7 00	35 00	.....	.....	.....	28 50	.....	28 50	143 50
24	902 00	367 50	1,269 50	1,054 40	424 00	1,478 40	786 25	291 00	1,077 25	487 64	312 00	799 64	8,864 49
25	.....	111 50	111 50	.....	225 50	225 50	.....	121 00	121 00	.....	72 50	72 50	697 00
26	4,226 25	11,682 00	15,908 25	4,976 07	12,918 50	17,894 57	5,512 65	14,187 00	19,699 65	3,566 92	14,888 00	18,454 92	114,925 59

Comparative Statement of Fishing Bounties Paid, from 1882 to 1888 inclusive.

Number.	1885.			1886.			1887.			1888.			Grand Total.
	Vessels. Amount.	Boats. Amount.	Total.	Vessels. Amount.	Boats. Amount.	Total.	Vessels. Amount.	Boats. Amount.	Total.	Vessels. Amount.	Boats. Amount.	al.	
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
27	626 15	4,090 50	4,716 65	770 44	4,149 50	4,919 94	1,225 78	4,396 00	5,621 78	654 06	2,067 00	2,721 06	29,842 51
28	426 00	3,552 50	3,978 50	967 40	3,413 00	4,380 40	1,127 00	3,636 00	4,763 00	782 00	3,826 50	4,608 50	32,764 90
29	76 00	1,433 50	1,509 50	271 53	1,364 00	1,635 53	734 73	1,409 00	2,143 73	180 90	1,582 50	1,763 40	14,072 68
30	1,128 15	9,076 50	10,204 65	2,009 37	8,926 50	10,935 87	3,087 51	9,441 00	12,528 51	1,616 96	7,476 00	9,092 96	76,680 09
31	....	8,005 00	8,005 00	.....	9,294 00	9,294 00	.....	8,862 00	8,862 00	....	9,891 50	9,891 50	54,352 00
32	1,524 26	14,900 50	16,424 76	1,176 98	15,465 50	16,642 48	1,233 98	15,335 25	16,569 23	1,098 05	16,527 50	17,625 55	114,471 77
33	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27 50	27 50	27 50
34	1,988 00	5,047 00	7,035 00	2,227 63	5,119 50	7,347 13	2,354 00	4,122 50	6,476 50	1,573 20	3,741 00	5,314 20	41,646 27
35	.....	.....	.....	....	.....	.....	....	.....	....	.....	.....	....	15 00
36	3,512 26	27,952 50	31,464 76	3,404 61	29,879 00	33,283 61	3,587 98	28,319 75	31,907 73	2,671 25	30,187 50	32,858 95	210,512 54

RECAPITULATION.

37	55,252 73	48,767 00	104,019 73	50,295 54	48,494 00	98,789 54	48,407 03	51,215 00	99,622 03	37,564 90	52,221 00	89,785 90	692,682 51
38	4,226 25	11,682 00	15,908 25	4,976 07	12,918 50	17,894 57	5,512 65	14,187 00	19,699 65	3,566 92	14,888 00	18,454 92	114,925 59
39	1,128 15	9,076 50	10,204 65	2,009 37	8,926 50	10,935 87	3,087 51	9,441 00	12,528 51	1,616 96	7,476 00	9,092 96	76,680 09
40	3,512 26	27,952 50	31,464 76	3,404 61	29,879 00	33,283 61	3,587 98	28,319 75	31,907 73	2,671 25	30,187 50	32,858 75	210,512 54
41	64,119 39	97,478 00	161,597 39	60,685 59	100,218 00	160,903 59	60,595 17	103,162 75	163,757 92	45,420 03	104,772 50	150,192 53	1,094,800 73

APPENDIX No. 3.

NOVA SCOTIA.

DISTRICT No. 1.

ANNUAL REPORT ON THE FISHERIES OF CAPE BRETON ISLAND, COMPRISING THE COUNTIES OF CAPE BRETON, INVERNESS, RICHMOND AND VICTORIA, FOR THE YEAR 1889, BY INSPECTOR A. C. BERTRAM.

North Sydney, C.B., 31st December, 1889.

Hon. Charles H. Tupper,
Minister of Marine and Fisheries, Ottawa.

Sir,—I have the honor to submit the following as my sixth annual report of the fisheries upon the coastal waters and streams of the Island of Cape Breton, for the calendar year ending this date.

The aggregate values of the fishery production for each year since this Island was made a distinct fishery district have been:—

Year.	Product Value.
1884	$1,421,787
1885	1,501,498
1886	1,561,655
1887	1,554,288
1888	1,481,988
1889	1,382,580

These figures show a large shortage in quantity and value of fishery products. The decrease in value for 1889 as compared with that of 1888 is $99,408, and as compared with 1887, $171,708, both of which years were noted for shortages. These shrinkages in values for successive years are serious, and especially so when they are confined to four counties. The year 1889 was the least productive of any year since I have had the honor of occupying the position of fishery officer.

The following table shows the increase and decrease, by counties, for the present year as compared with last year:—

County.	Product Value.		Increase.	Decrease.
	1889.	1888.		
	$	$	$	$
Cape Breton	195,294	271,539	.....	76,245
Inverness	378,327	342,695	35,632	.....
Richmond	566,347	644,101	....	77,754
Victoria	242,612	223,653	18,959	.....
Total	1,382,580	1,481,988	54,591	154,999
Balance, decrease in 1889	....	.....	.....	99,408

A decrease to the extent above shown is deserving of enquiry, and especially so in view of the fact that the comparison is made with 1888, which was, itself marked by an important decrease in fishery value. By taking the average aggregate values for the five years previous to the present, that is, from 1884 to 1888, inclusive, as the comparative amount, it is seen that the shortage in the aggregate amount for the present year is $111,664, below that of an average year. The only redeeming feature in the fishery operations of the year is, that for good qualities of fish, and particularly for mackerel, prices ruled high, and this came in as a partial alleviation to the circumstance in which fishermen were placed by failure in catch. In short, were it not for the superior prices realized the report on the fisheries of this Island might be comprehended in two words—total failure—as there would have been nothing to report but decrease from every section and county. This decrease not being confined only to one or two localities, but being a prevalent characteristic, and this being the third year in succession in which it prevails, it may not be inappropriate to point out the leading causes known to operate strongly in bringing about this succession of failures.

THE CHIEF AGENTS WHICH CAUSE SHORTAGE OF CATCH.

The first and principal of these causes, the fishermen are everywhere unanimous in agreeing upon that is, the shore fisheries are being ruined by purse-seine fishing, as well as by trawl or set-line fishing. It is now a good many years since these destructive contrivances were imported into the shore fisheries; and although their evil consequences were not very apparent after one or two years, a continuation of the system has produced ruinous effects of so marked a character that it has passed beyond the region of probability into that of established fact. Now that the shore fisheries have undergone such marked diminution, the fatal effects of fishing by seines and trawls, are each successive year becoming more apparent; and the failure of the present year is but a fuller development of a process of exhaustion which has been going on ever since the employment of these destructive methods, which, are rapidly decimating the shoal waters, from which the industry is rapidly disappearing, as it has done on most of the European shores long ago. The resident fisherman who prosecutes his calling in boats depends entirely upon hand-line and straight-net fishing; but whenever a school strikes the shore, seine fishermen appear upon the grounds and commence operations. The consequence is that the schools are broken, and such as escape the seines are scared away and lost to further capture by the boat fishermen. The mischief does not end here, for on being enclosed in seines, at least 50 per cent. on an average of the fish are of kinds not wanted. This residue is taken out dead, thrown back into the water, and to this mass of dead, rotting matter are added the offals or cleanings from the fish retained, by which a large area of bottom is strewn, by aid of wind and tide, with tons upon tons of putrid matter, which repels all approaching schools for the remainder of the season. This process repeated upon the same grounds, and within the same bays, year after year, destroys the fish beyond the powers of reproduction; and the condition of the waters, together with repeated scaring away, leads the fish by degrees to abandon these places for other grounds. There is now no more firmly and accepted fact than that the fish shun filthy and polluted waters, just as graminivarous animals on land avoid filthy pastures whenever they can, by seeking out cleaner grounds. That fish will flee from tainted bait in place of being attracted by it is known to everyone, and is a great illustration of the aversion of fish to contact with putrid or even tainted matter. Out of a haul of 500 barrels by a purse-seine, from 200 to 250 barrels will be rejected, and is thus lost to food and commerce, besides being thrown out dead to pollute the waters and the bottom. This putrid mass will be largely increased by offals from the retained fish being thrown in after it.

The question of permitting purse-seine and trawl fishing within the three mile limit from headland to headland, by foreigners or residents, narrows itself to one of two alternatives, viz.:—whether the present practice of purse-seine and trawl fishing shall be allowed to continue longer, with the result that the inshore fisheries will become

extinct. Our present active boat fishing population of about 38,000 depending upon this means of fishing for a livelihood, will be deprived of their living and driven to migrate and thus the produce of their industry will be lost to the home and foreign commerce of this country, into which it has herefore entered as an important factor. A continuance of the present system can at best only prove but of temporary advantage, to the reckless greed of those who fish in vessels; but ultimately, they too, must reap permanent loss as the result of their own methods.

The second rational alternative is, that the shore fisheries should be preserved to their rightful inheritors, the resident boat fishermen who, with their families, live by these fisheries, as their forefathers have done before them, and whose existence depends upon this, both for food and as a mean of purchasing other necessary supplies of life, and thus securing the produce of their labors to commerce in perpetuity. To accomplish these most desirable ends, it becomes an absolute necessity to prohibit the taking of fish by means of purse-seines and trawls within the three-mile limit by any and all persons subjects of Her Majesty in Canada or otherwise. The adoption of this second alternative of limiting the methods of shore fishing to hand-line and ordinary net fishing would secure the revival of the shore fisheries, and there would be then no doubt of the perpetuation of the means of livelihood to our fishing population, and that they would contribute a permanent supply to the country's wealth.

Minor causes of a temporary and local character common to the fisheries of past years, have recurred and exercised some influence in shortening the catch. One of these is an old-standing complaint, which fishermen themselves might remedy, were they to adopt the means at their disposal. This complaint is the casual appearance of fish, simultaneously with a total absence of bait at the necessary time. As yet, Cape Breton fishermen do not avail themselves of the aid of ice, wherewith to preserve bait when it can be had, and thus keep a supply in readiness for the arrival of fish. There was a general complaint on this head during the present year, and the trouble extended to the lobster fishery, which is said to be short in catch, chiefly owing to the absence of bait. Every settlement produces sufficient ice for local supply, which could be gathered with very little or no outlay, except that of labor; and as the season for this work occurs when there is no fishing to be done, each fisherman might, without loss of time to any other industry, lay up a supply of ice which would prove useful and profitable, not only as a means of preserving fresh bait, but also as an invaluable auxiliary in the curing of fish during the hot season, when, owing to the absence of method to meet circumstances, much of the best fish of the season, particulary herring, is deteriorated or wholly spoilt before it can be salted. Our fishermen are not lacking in methods of curing fish, after the manner of the British islands; but they fail taking into account the climatic differences of countries and the effects of a high temperature in summer, as contrasted with the cooler temperature of spring and autumn. They also lose sight of the fact that the simple methods of curing, which are quite successful in the latter seasons are inadequate to meet the heated condition of the former, and it is in meeting this condition that, an ample supply of ice would prove valuable alike to fishermen and purchasers of their products. The fact is, that the Cape Breton coastal waters produce superior kinds of fish to those of the coasts of Europe; but our fishermen have as yet failed, for the most part, to adapt their methods to the peculiarities of the climate.

The numerous complaints arising out of the failure in the catch, owing to the scarcity of bait, demonstrates the importance of a strict prohibition on the sale of bait to foreigners. The improvident abound amongst fishermen as well as in other classes of people, and many an improvident fisherman will if the chance offers, sell for a trifle of money in hand the bait supply on which depends his chief catch of fish for the season. The law which would prohibit his doing this would be an act of true economy, ultimately profitable to the individual as well as to the public.

CODFISH.

This valuable branch of fishing is in the main a failure this year. During the spring, there was a general scarcity of cod all around the coast. During the summer it struck at a few points in fair quantities; but in most of these instances there was a complete dearth of bait, so that the run could not be taken advantage of to any appreciable extent. During the autumn and early winter the fish visited the coast in large numbers, and a few good catches were fortunately made, but not enough to bring the year's product up to anything like an average. Numerically, the local reports of failure may be represented by *six* to *two*, and the reports of average catches by the number *two*. In connection with the cod fishery, one report mentions an increase of hake and haddock. The cod fishery is being destroyed by trawl-line fishing which wounds large numbers of fish, scares them off the grounds and destroys the mother fish.

FISH OIL.

With a heavy diminution in the quantity of fish caught, particularly of cod, fish oils must necessarily be short in supply. Could the fishermen be induced to pay more attention to separating the cod livers for the purpose of procuring medicinal oil, which operation entails but a very trifling outlay, this would add an important amount to the general profits of each season's work. I regret finding but little progress in this direction, and I believe it is mainly owing to absence of knowledge as to the simplicity and inexpensiveness of the operation.

HERRING.

The catch of herring is also marked by general failure. Decreases in catch may be indicated by the number *five*; average catches by *one*; without any increase reported from any quarter. A phenomenal catch of herring occurred in Sydney harbor last winter: that is to say, during the winter of 1888–89. After the ice had formed to a considerable thickness it was accidently discovered that the waters beneath were swarming with herring. The work of lowering nets by holes cut in the ice was at once begun, with the result that an aggregate of 1,500 barrels of superior fish were secured. Whether this run of herring was accidental, or whether it had occurred before, is not yet known. The re-appearance or discontinuance of these fish this winter is a matter now watched with interest, apart from the consideration of profit and loss.

MACKEREL.

The estimated catch may be correctly indicated, locally, by increases and good averages, *six* to *four* decreases, which will bring up the total result to about a short average. The high prices realized did much towards alleviating the heavy deficiences which occurred in nearly all other fisheries. Boat fishermen maintain that had it not been for the mischievous interference of purse-seines, invariably breaking up mackerel schools in the bays, they would have made a fair average catch. As this subject is fully dealt with in another part of this report, it is unnecessary to refer to this matter again here.

LOBSTERS.

The result of this fishery may be described as satisfactory, on an average, without any marked increase. In most localities lobsters were fairly plentiful; but scarcity of bait lessened the amount taken. I regret to have to refer to most mischievous practices resorted to by many lobster fishermen, and to which I beg to call the attention of your Department; for if not efficiently checked, it will result in the decimation of the lobster on this coast, in spite of the wise provisions already made for the perpetuation of this industry. The practices which I refer to are that, being aware it is illegal to retain female lobsters with spawn, many fishermen knock the spawn off and thus defy detection. The second practice is to destroy all lobsters

found in the traps of a size below the minimum dimension, which, by the regulations, they are allowed to retain. This killing and throwing away of small lobsters is perpetuated on the plea that, if allowed to live, they return again to the traps and thus keep on devouring the bait. Anything more vicious than these practices or more certain to result in the total extinction of the fish would be difficult to imagine, and they certainly require drastic measures to be stopped.

SALMON.

The salmon fishery shows a marked decrease all around the coast, only one locality having attained an average catch; but the ascent of salmon to the rivers was for the most part abundant, and anglers had capital sport, the Margaree River, especially, having more than sustained its usual reputation for splendid angling.

ALEWIVES.

A general decrease is reported, only one locality showing an average catch.

HALIBUT.

This fishery is generally described as a total failure, two districts only reporting an average catch. More fish were, however, canned this year than usual.

THE CANNERIES.

The prosecution of the canning industry, whilst lacking any marked increase, makes an average sufficiently encouraging for the future. The canning of lobsters attained a satisfactory average amount. The canning of herring and mackerel was not so extensively followed this year as last. The canning of halibut has been more attended to than before, and the amount preserved has been increased. The canning of halibut is but a recent industry in this division, and whether it will grow to any considerable proportions or not depends of course upon the reception of the article in the market, and sufficient trial has not yet been had to warrant a prediction as to what the industry may yet attain to.

MINOR FISHERIES.

The annexed tabulated statistics indicate at a glance the result of the year's industry in the minor fisheries—such as trout, eels, smelt, squid, &c.—without making it necessary to enter upon a detailed description of them.

THE FISHERIES PROTECTION SERVICE

by the Government cutters is invaluable in preserving the fisheries and in aiding our native fishermen to secure the fruits of their industry from off the heritage of waters that is theirs only. Were it not for this service in keeping foreigners out of the bays and from the shores within the three-mile limit it would be difficult to estimate the straits to which our boat fishermen would, in all probability, have been reduced for the past two years. The expense of this marine protection is regarded as extremely light when balanced against the good it effects, and the value of the fisheries as a food supply and its value in the commerce of the country. For this service the fishermen are thankful, and implicitly trust it will be continued for all time to come, without surrender upon any terms whatever. It is reported that, occasionally, the ubiquitous Yankee will drop down amongst Provincials when seining within headlands. If this be so it goes to confirm a suspicion hitherto entertained by many, that through the use of the telegraph and the aid of secret agents, Yankee fishermen are pretty correctly posted as to the whereabouts of the Government police vessels. Be this true or not, the fact remains that the protective service rendered is invaluable to our fisheries, and that the number of vessels in the service should rather be increased than diminished.

REMEDIAL MEASURES.

In the first pages of this report reference has been made to the destruction wrought upon the fisheries of Cape Breton by the systems of fishing with purse-seines and trawls, and to this the special attention of the Department is solicited. The boat fishermen are looking to the Department with anxious expectancy of securing a prohibition of these methods of fishing within three miles of headlands; and after careful consideration of all the circumstances and of the general situation for the past six years, since I became associated with these fisheries in an official capacity, I beg to add that my views fully concur with those of the fishermen, amongst whom are found as intelligent and observing men as in any class of our industrial population.

With reference to the practice of some lobster fishermen in the direction of evading the regulations and decimating the fish, it seems difficult to devise effective and inexpensive remedies. The simplest method might be to compel everyone engaged in lobster trapping to take a license from the Department, with the name of the owner of the boat, by whom manned, and that every person before beginning to fish for lobsters, whether as owner, sharesman or hired hand, subscribe to a statutory declaration binding himself to faithfully observe the regulations, a copy of which should be furnished him.

On page 51 of this report reference is made to the loss incurred by boat fishermen by not using ice for the purpose of preserving bait and curing fish. On page 52 it is also pointed out that the preparation of medicinal oil from cod livers is not nearly so general as might be, consistent with larger returns to the fishermen for their labors. Both of these defects are almost solely owing to the absence of knowledge of their importance, together with a lack of information on the methods to be pursued. In this connection I beg to suggest that your Department would render a most valuable service to the fishermen in issuing a bulletin, giving simple instructions in method of preparing ice-houses and storing the material, as well as in that of extracting medicinal oil from cod livers. Such a publication, written in a style free from technicalities—with a few drawings—distributed among fishermen, free of cost, would, I am sure, be productive of a large amount of good, and conduce to the economy of the fisheries.

Hereto are appended synopses of the reports of the local fishery overseers and tables of fishery statistics.

I have the honor to be, Sir,
Your very obedient servant,
A. C. BERTRAM,
Inspector of Fisheries for Division No. 1, N.S.

SYNOPSES OF FISHERY OVERSEERS' REPORTS.

COUNTY OF CAPE BRETON.

Overseer Francis Quinan, of Sydney, reports that in his district there has been a great decrease in the catch of deep-sea fish compared with previous years. The only species which show an increase are mackerel and alewives. Lobster fishing was exceptionally good at first; but from the middle of June until the close of the season they began to decrease in numbers as well as size, and towards the end the daily catch was very small. Fines were imposed on the managers of both factories at Cow Bay for having in possession lobsters under the prescribed size.

With regard to the decrease in the catch of deep-sea fish, experienced fishermen attribute it to trawling and the throwing of offal overboard, thereby polluting the waters and keeping the fish from shore. Mr. Quinan favors the total abolition of trawls and purse-seines.

A new departure in fishing in this district was the taking of 1,200 barrels of herring through the ice on the southern arm of Sydney harbor. Should these fish

continue to frequent the harbor of Sydney it will be a source of profit to the people. The fishermen of late years have been in more comfortable circumstances, and better equipped for prosecuting their calling with improved appliances. The fishery regulations were well observed, very few violations taking place.

Overseer Alexander McDonald, of East Bay, reports a large decrease in every branch of deep-sea fishing, the catch being only about one-half that of last year. The fish did not visit the shore waters. The fishermen in this district prosecuted the fishery with as much energy and perseverance as in any previous season, but their labors were poorly rewarded. On the banks, in close proximity to the shores, there were very few fish this year, as compared with former years. Halibut was a complete failure. Towards the fall, codfish, mackerel and herring made their appearance on the coast, but the season was so far advanced and the weather so blustery, that fishermen could not venture out every day. Lobsters were plentiful in this district during the season, but owing to the small catch of codfish, bait could not be had. The pack is therefore slightly under that of last year. Salmon net-fishing was poor, but in October the fish ascended the rivers in large numbers. Smelts are only taken for home consumption, there being no near market for them.

The fishery regulations were well observed.

Overseer Jas. P. Burke, of Main-à-Dieu, reports a falling off in the catch of codfish and summer herring. Mackerel fishing shows a marked increase, and the high prices obtained enable the fishermen to purchase the necessary supplies for the approaching winter. During the early part of the season codfish were very scarce, fishermen returning day after day with empty boats; but towards the end they struck inshore and good catches were made. In the herring fishery the decrease is 336 barrels, made up as follows: In Main-à-Dieu 820 barrels taken this year against 1,000 barrels last; Mira Bay, 850 barrels against 950; and at Scattarie Island, 300 barrels against 400 last year.

These fish, like cod, did not appear on the coast as plentifully as in former years. The price realized by fishermen for summer herring was $5.25 a barrel. Mackerel were abundant in the spring; large numbers passed north, but the catch in nets was small. In August they again appeared, and fishermen did well with hand lines. No. 1's sold in Halifax for $24. a barrel.

The fall mackerel fishery was the best seen for many years in this district, large hauls being made. The high prices which prevailed at the time induced fishermen to give all their attention to this fishery; the result was, that cod-fishing was neglected, which accounts, to a certain extent, for the decrease in the yield of this fishery. The catch of mackerel amounted to 611 barrels, about 300 barrels over that of last year. Overseer Burke is of the opinion that were purse-seining prohibited the mackerel fishery would improve year after year. These fish are inclined to keep close inshore, and were seining prohibited straight net and hand-line fishing would be the methods of our fishermen. The lobster fishery shows an increase, and prices were better. On the whole, the season was a good one for this fishery, there being very little destruction to traps and other gear by storms. The canned herring industry shows a decline, as compared with last year, owing to a scarcity of summer herring. Salmon were scarce, only twenty-five cases being packed this year. In halibut an increased catch is noticed over that of last year, 130 cases being canned at the Main-à-Dieu factory. Taking the season's fishing all through, it was a fairly good one, notwithstanding the shortage in cod and herring. The fair prices realized made up for the decrease in catch. The bounty is of great assistance to fishermen, it enabling them to purchase supplies at a season of the year when money is scarce in fishing districts.

Overseer Sir York Barrington, of Sydney Mines, reports a decrease in the catch of herring and mackerel. Herring did not strike in, owing to high winds, and mackerel fed outside and did not, as usual, enter the harbors and bays of this district. There is only a slight increase in the catch of cod, although boat fishermen reported them plentiful in the Bras d'Or lakes. The great drawback to this fishery is the scarcity of bait. Fishermen were employed during the season on the Cape Breton

Railway under construction; the catch of all kinds of fish was, therefere, not so large as it would have been had the fishermen been engagod at it all the season. The lobster canning establishment at Bras d'Or Gut, which had been closed for two years past, was in operation during this season, and did well. Lobsters were abundant until near the close of the season. Many shore fishermen contend that lobster pots frighten away all kinds of fish, particularly salmon. Overseer Barrington is not prepared to endorse this theory. An increase in the catch of the smaller kinds of the finny tribe is also reported.

INVERNESS COUNTY.

Overseer D. F. McLean, of Port Hood, reports a decrease in the following branches: Salmon, mackerel, herring, cod, trout, smelts and oysters; and an increase in hake, haddock, squid, lobsters and alewives. On the whole, there was a considerable falling off. The causes which lead to this state of things are often very difficult to determine, either by the most experienced fisherman or the most painstaking and practical fishery officer. One cause cannot, however, be disputed—that is, a less vigorous prosecution of the fishery than in previous years, and this applies to inland districts as well. Another cause was, in former years, very generally attributed to the falling off in the catch and with almost as much force as the foregoing, viz., stormy weather. During the current season the weather was unusually calm, up to the 1st of October; still, very few fish were taken as compared with past years. The fishermen now contend that the scarcity of bait was due to calm weather. There may be a great deal in this contention, for it is a well known fact that fish of all kinds are more abundant on the coast and more accessible to the fishermen after stormy weather. There was a fair illustration of this fact since the 15th of October. Since then stormy weather was frequent, and fish were taken in abundance all around the coast. Scientific enquiries now lead one to believe that fish keep in deep water during calm weather, and although this may be contrary to former opinions expressed on this subject by this overseer, he has, after ten years' experience and careful enquiry, come to the same conclusion.

The principal abuse which prevails in this district is seine fishing which proves very destructive to shore fisheries, both by destroying young fish and polluting fishing grounds with dead fish thrown into the water. This is invariably done with small fish, not considered large enough to cure.

The several close seasons were well observed. Salmon were late going up streams to spawn, owing to the exceedingly dry weather which prevailed in August, September and part of October. Five lobster canning establishments were in operation in the district during the past season, giving employment to 110 persons, besides the fishermen. The quality of lobsters was very fair, rather better than during previous years, and there has been an increase in the catch, as compared with the season of 1888. The party who had a license for a trap-net at Port Hood was not so successful in his fishing as he anticipated. It was, however, quite a boon to shore fishermen in the matter of securing fresh bait. The quantity and kinds of fish taken in this trap-net was as follows:—

Mackerel, 27 brls., value	$400
Herring 20 do. do.	65
Squid 38,000 pounds do.	508
	$973

Overseer David Ross, of North East Margaree, reports the catch of mackerel in his district as about double that of last year. He also mentions an increase of over 3,000 quintals of codfish; salmon and herring, however, show a decrease, arising from scarcty of fish on the coast. Fly-fishing on the north east branch of the Margaree River was never better than during the past season. The pools were filled with salmon and sea trout, and the anglers who gathered on the banks of the rivers

met with excellent sport. Indeed, the quantity of these fish landed exceeded that of any year for the past twenty years. The lobster fishery, particulary at Pleasant Bay, where two factories were in operation, was good, lobsters being large and abundant. A few violations of the regulations occurred, and the offenders were fined in every case detected. This officer recommends the appointment of an active guardian at Big Intervale. It is useless for the overseer to protect the river from tidal waters up, if vigilance is not exhibited at the source of the river as well.

Overseer James Coady, of South West Margaree, reports an increase in the catch of mackerel and codfish. Owing to the high price which ruled for mackerel, the fishermen devoted more time to this fishery than to cod fishing. Salmon net-fishing was almost a failure, the catch being more than 50 per cent. below that of last year. The result was that the American company stationed at Margaree harbor, and which is engaged in freezing these fish for the American market, did comparatively nothing. While an unusually large number of fish entered the Margaree River, few were taken in nets along the shore. Some fishermen are of the opinion that rough water and high seas caused them to keep in deep water instead of following the shore line, as formerly. There was an average catch of lobsters in this district. Three factories were operated, and the competition is so keen that great vigilance is required to prevent violations of the law. The other kinds of fish show an average catch. The season's yield of fish is not, therefore, behind that of former years, and fishermen are in fairly good circumstances.

Overseer Peter McEachern, of Glendale, reports more than an average catch of all kinds of fish, except mackerel. Codfish were scarce during the early part of the season, but during the months of August, September and October they became more plentiful. The mackerel fishery was not as good as in other districts. In October and November squid struck in plentifully, thus enabling Cod fishermen to obtain a supply of bait. The rivers of this district were not well stocked with salmon and trout, owing to the season being dry and the streams low. Several seizures of nets were made for violations of the law but the owners, could not be identified.

RICHMOND COUNTY.

Overseer Duncan Cameron, of St. Peters, reports a decrease in every branch of deep sea fishery excepting alewives. This falling off is not attributable to local causes or to a less vigorous prosecution of the industry, but to the fact that on the approach of fish inshore in the spring they are frightened away by American and Canadian seiners. This cause of the decrease in the fishery is also entertained by the most experienced fishermen of this district. A regulation prohibiting the use of purse seines and trawls in inshore waters is much wanted. Overseer Cameron recommends the appointment of special guardians at each lobster factory during the fishing season, or that the factories between River Bourgeois and Point Micheau be closed, for a term of three years, so as to allow of lobsters growing and multiplying. Those now prosecuting this fishery within the above limits do not find it a profitable occupation, owing to the run of fish being small. The close seasons were well observed. Overseer Cameron reports no fishways in his district.

Overseer Francis Marmeau, of Arichat, reports the catch of herring in his district below the average. A few fisherman on the south side did well, but taking the fishing all through, both as regards quality and quantity, the season's catch was not good. The spring mackerel fishing was also poor, but fall fishing was good, particularly at Little Anse, Gros Nez and Petit de Grat. The mackerel were the largest and fattest ever taken on the coast, and could be nearly all classed as No. 1's, the fishermen thus realizing good prices for them. The shore cod fishing during the early part of the season was a failure, fish being scarce and the weather unfavorable. Bait was also scarce, and this operated against the fishery. The vessels of this district which are engaged in the deep-sea cod fishery did very well, much better than last year. On the whole, the returns show a slight increase over the yield of last year. The lobster fishery was a success, lobster being abundant as well as

large. Packers report a good season, there being an advance in prices over the past few years. The fishery regulations were well observed.

VICTORIA COUNTY.

Overseer Wm. Bingham, of Englishtown, reports a larger number of men engaged in the fishing industry than last year. Herring were scarce, and poor catches were made all along the coast, except at the head of St. Ann's harbor, where some fishermen did fairly well. Codfish were also scarce, and the catch blow the average. Fishermen attribute this falling off to vessels trawling at distances of three to five miles from shore, which destroy the mother fish and pollute the fishing grounds with offals, thus driving fish away in search of cleaner pastures. This overseer strongly recommends that trawling be prohibited.

Mackerel were scarce in the early part of the season, and the small quantity taken sold at a very high figure; but near the close of the season large schools were seen passing southwards, which were prevented from entering the bays and harbors of this coast by prevailing winds; otherwise, the fishermen would have done remarkably well in this branch of the fishing industry, although prices became lower through large catches being taken elsewhere.

It appears by the information learnt from fishermen and from this officer's own experience that the spring and summer herring which entered the bays of his district were only parts of schools broken up by seiners scattered all along the coast outside of the limit, and which on every easterly gale ran for shelter in the harbors and bays. These vessels are believed to be the cause of breaking up the schools, which would otherwise approach the shores: hence the scarcity. Squid always follows summer herring in great abundance, and is as profitable as any fishery on the coast. Nova Scotians and Americans buy them for bait, and the French from St. Pierre send their vessels to purchase full cargoes, paying as much as 20c., 25c., 30c., and even 40c. per hundred, thus benefiting the fishermen by circulating some thousands of dollars among them. Salmon is much below the average catch of last season. The wardens, on the North River and Barachois report a disposition on the part of the people to poach. This overseer recommends that an additional warden be appointed for the upper falls of North River four miles from its mouth, and that the present warden be made to take charge of the lower branches—also, that, a warden be appointed for the Barasoe's at the Rear Settlement. The distance between the mouth of these streams and the back falls is too long for the wardens, who are active and use every means to keep down poaching, but they say it is difficult to prevent violations of the law on the rear of the rivers without further assistance. Salmon ascend to the spawning grounds from the ocean, and at the close of the season the most careful vigilance is required.

Overseer Duncan McDonald, of Aspy Bay, reports a good fishing season in his district. The increase in the catch of mackerel and the high price which ruled more than compensate any decrease in the catch of other kinds of fish. Last year mackerel fishing was a complete failure in this district, and the fishermen believed that this branch of the fisheries had seen its last days; but this season's experience dispelled such convictions, as the fall run of mackerel was both abundant and large, and the fish remained on the coast longer than before. A great many mackerel were taken this year by hook and line, and it is a pity that this ancient and successful mode of fishing was not generally practiced. It certainly would be more profitable for the local fishermen and far better for the fishery. Nothing is so calculated to destroy this fishery than the wholesale destruction caused by seines. Had it not been for seining the mackerel fishery would have been 50 per cent. better. The schools were broken up and the fish frightened away. In cod fishing, the greatest drawback was found to be in the scarcity of bait. During the first part of the season codfish were scarce, but in the fall and winter they were plentiful, and while the weather kept favorable good hauls could always be counted upon. In fact, there is no season in the year when codfishing is so good as late in the fall and during winter. Only one factory was engaged in canning lobsters in this district, and

did fairly well. The season being so short, Messrs. Zwicker & Co. refused to open their factory. This accounts for the decrease in the catch of lobsters.

Overseer Donald McQuarrie, of Middle River, reports a decrease in the catch of codfish in his district. The herring and mackerel statistics also show a slight decrease. The chief cause of this falling off is due to the fact that large numbers of fishermen were engaged working on the railway and other public works on the Island. There is quite an area of oyster beds showing life in St. Patrick's channel, and it is expected that in a few years these beds will yield fair returns.

Sea-trout were plentiful in Middle River, and the pools in October were well filled with salmon ascending the river to spawn. Two hundred fish were easily secured for the Sydney fish hatchery. There were no violations of the law.

DISTRICT No. 2.

ANNUAL REPORT ON THE FISHERIES OF DISTRICT No. 2 OF NOVA SCOTIA, COMPRISING THE COUNTIES OF CUMBERLAND, COLCHESTER, PICTOU, ANTIGONISH, GUYSBOROUGH, HALIFAX AND HANTS, FOR THE YEAR 1889, BY INSPECTOR ROBT. HOCKIN.

Pictou, N. S., 31st December, 1889.

Hon. Charles H. Tupper,
Minister of Marine and Fisheries.

Sir,—I have the honor to submit a report of the fisheries of District No. 2, Province of Nova Scotia, for the year ending 31st December, 1889, together with synopses of the reports of the local overseers, also the statistical returns from the various counties; as compiled from the reports of these officers.

I have also prepared comparative tables showing the increase or decrease in each county, as well as a table giving the increase or decrease in each kind of fish, and a table showing the annual catch in each county from the year 1876 to 1889. this latter gives at a glance the history of the fishing industries of the county from the earliest period that returns were available.

The returns exhibit a decrease of nearly 10 per cent. in the value of fish caught in this district from that of last year. This is almost altogether attributable to the failure in the catch of deep-sea fish.

Of the Atlantic counties, Halifax shows a decrease of nearly 20 per cent. in the value of the entire catch, and 50 per cent. decrease in the quantity of deep-sea fish caught.

Guysborough shows a decrease in the quantity of deep-sea fish caught of 50 per cent.; but in values, the exhibit shows only a decrease of 4 per cent., the loss being compensated by an increase in the catch of herring, alewives and lobsters.

The decline in the deep-sea fish in this county is partially owing to the withdrawal of banking vessels.

Of the counties on the Straits of Northumberland, Antigonish shows an increase of 8 per cent., and Pictou an increase of 27 per cent. in value.

Cumberland, whose fishing areas are chiefly on the Straits of Northumberland and partially on the Bay of Fundy, shows a decrease of 2 per cent. in value.

Hants, on the Bay of Fundy, shows a decrease of 17 per cent. in value.

Colchester, practically a bay of Fundy County, shows an increase of 20 per cent.

SALMON.

The returns from the whole district show a decrease in value of 10 per cent., the greater proportion of this being in pickled or Labrador salmon. In fresh salmon returned, there is a small increase in quantity, which is, however, slightly overbalanced by the decrease in smoked and preserved salmon.

Halifax County shows a decrease of 20 per cent. in pickled, and 60 per cent. in fresh ; Guysborough,a decrease of 20 per cent. in pickled, and 12 per cent. in fresh — the other counties making no return of pickled salmon. Antigonish shows a decrease of 27 per cent. ; Hants, a decrease of 20 per cent. ; Cumberland returns about the same as last year, while Pictou County shows an increase of 41 per cent., and Colchester an increase of 140 per cent.

It will be observed, however, that 90 per cent. of the whole quantity caught is returned from the counties of Halifax, Guysborough, Antigonish and Pictou, and that of these the Atlantic counties show a decrease of about 40 per cent., while those on the Straits of Northumberland show an increase of 13 per cent., the Bay of Fundy counties showing an increase of 63 per cent.

The enemies of the salmon in the seas are the porpoise or the white whale, and upon the rivers, as is well understood, the poacher and the mill-dam. The damage done by poaching is two-fold, not only directly by killing the gravid fish at a time when its capture is comparatively easy, but indirectly, by disturbing them at a period when they should be left quiet; otherwise much of the spawn is not impregnated.

A considerable effort has been made upon the part of the Government to increase this valuable fish ; but it must not be forgotten that with the increase of the fish there will be increased aggressiveness on the part of the poacher, making it necessary to expend more money to guard the rivers. Especially will this be the case where the inhabitants of the banks of a river receive no benefit from the fishery. Now, it so happens that in the rivers flowing into the Straits of Northumberland the fish do not enter until September, and the inhabitants find themselves shut off from their riparian rights altogether in the interest of those who fish in deep waters. The consequence is, it is class against class, and the poacher meets with a a moral support in this community. If it were practicable to compromise the matter and allow the river inhabitants to participate in the benefits of the fishery, it is probable your officials would find that most important factor in upholding the regulations, viz. an appreciative public opinion, in their favor, and the law more effectively and more economically maintained.

But the chief enemy, and one which ought to be more easily controlled, is the mill-dam. As I propose, however, to discuss this at length under the head of "Fish Passes," I will only pause here to remark that it seems questionable if any or at least a very small proportion of salmon spawn deposited below a mill-dam can arrive at maturity. Several things point to the contrary. It is a well-known instinct of the gravid fish to ascend a river as far as it can to deposit its spawn. Again, the fry no sooner acquires strength after it has burst the shell than it also heads up stream This would seem to indicate that instinct teaches them that the head waters of a river are the feeding grounds, and it is probable also that the young fish meet with fewer enemies in the shallower waters than they would below the dam. I submit that it seems improbable that the fry could ascend a fish-ladder, and that hence it is doubly important that the gravid fish should have access to the head waters of a river.

ALEWIVES.

As far as I have investigated the relative importance of fish requiring the attention of the Department and legislative aid in its propagation, I am inclined to place the alewife first on the list, not because of its commercial value—although this is by no means insignificant—but on account of the probable effect it has upon the deep-sea fisheries. I have the warrant of a distinguished ichthyologist for the assertion that it is probable that the numerous schools of adult fish coming in from the depths of the ocean to the shores in the spring, and of the young that pass out seaward in the autumn, draw the larger sea fish into the vicinity of the land, keeping them there for a considerable part of the year.

SMELTS.

There is a decrease in the catch of smelts of 20 per cent. from that of last year.

FISH-PASSES.

The foregoing comprise the principal anadromous fishes, the increase or decrease in the quantities of which is largely due to and under the control of man. Valuable in themselves, and likely to give ample return for any expenditure in their cultivation, this seems still to be an insignificant proportion of their real value, for to quote an eminent writer:

"It is well known that while anadromous fish were present there was an ample supply of cod, haddock, halibut, hake and various other species close into the shore, and that a full fare could be caught at a short distance from land; and there can be no reasonable question that the great decrease in numbers of the former has been caused in large part by human agencies, and that to this fact it is owing that, year by year, the location of deep-sea fish is found further and further from shore." The truth of the foregoing is, I think, self-evident, and nothing seems clearer than that it is within the power of a very limited number of mill owners to materially injure the welfare of a whole community. That they will do so unless your officials are continually aggressive is evident. During an examination of the rivers and streams of Halifax County, one of the most important fishing counties in my district, I found two-thirds of the rivers of the County completely obstructed, so that anadromous fish could not ascend, and of eleven fish-ways in the county, not one of them effectively maintained, when visited. Why is it that new dams built across a river are never known to have a fish-way in them, although at the time of their erection a fish-way could be more economically constructed? Why is it, if a fish-way is broken or out of repair, the owner now turns to the Department? It is because of the gracious Act of Parliament which authorizes the Minister to pay one-half of the expense in constructing and maintaining a fish-way. The average mill owner relies upon the Department relieving him of a portion of the cost, and does nothing of himself to maintain a free passage for fish, or only does so under compulsion.

In the experimental stage of fish-passes it may have been judicious to contribute towards their expense; but that properly constructed fish-passes are what they purport to be is beyond the experimental stage, and I do not see why a mill owner should ignore the public rights of having free ingress and egress for fish. The erection of a dam across a stream which it is necessary for the public interest that fish should pass should be prohibited under heavy penalty, unless a certificate could be shown from the proper officer that it had an efficient fish-way; and further, the penalty should be equally heavy for allowing it to get out of repair.

Here, then we have the two enemies of anadromous fish, and consequently of the fishery interest—the poacher, active and daring, doing his work most in the night; and the respectable mill owner—nearly always an influential man in his locality.

To guard the public interest against such formidable adversaries would require for the first, men equally active and daring, and, for the second, determined men, firm and fearless. But at present the wardens, upon whom we have to depend largely for the enforcement of the law, are many of them aged men, physically unable to combat the poacher; and it does not appear that any of them will engage in an encounter with the mill owner. Indeed, I am of the opinion that the public receive very little value for the money expended in paying the salaries of wardens.

DEEP-SEA FISH.

COD.

There has been a serious decline in the quantity of this important fish caught during the year. Guysboro' shows a decline of 50 per cent. from last year, and 54 per cent. from an average; Halifax, a decline of 50 per cent. from last year, and 40 per cent. below an average. The catch with other counties is unimportant. Supposing every fisherman returned from these counties as engaged in cod fishing, it shows a decline of $30 per head, the value of an average catch being $60, more or less.

HALIBUT.

The returns from Halifax show a decline of 52 per cent. less than last year, and 54 per cent. from an average. Guysboro' shows a decline of 41 per cent. from last year, and 60 per cent. from an average.

HERRINGS.

There is a slight decrease in the quantity caught in the whole district. The Atlantic counties show a decrease of 30 per cent., a slight increase in Guysboro' being overbalanced by a decrease of 50 per cent. in Halifax.

The movements of these fish are a puzzle to fishermen generally, and it is difficult to discover the probable causes with the naked eye. The following, however, from under the microscope, may throw some light upon the subject :—

While at no time does the apparatus of the zoologist fail to reveal the presence of animal life in the ocean, even though of microscopic dimensions, at times this manifests itself in bodies, the masses of which almost stagger the imagination, the sea for hundreds of miles in extent being an animated mush. What with shrimps and other crustaceans, larvae of mollusks, worms, &c., a bucket full of water taken indiscriminately over the entire area seems filled with animal life. Nor are these organisims confined to the surface, the evidence of the beam trawl and dredge revealing their presence in equal quantities below. Where these smaller animals are aggregated in unusual numbers are generally to be found great schools of mackerel, herring and other animals pursuing them.

MACKEREL.

The returns of the year show an increase in the district of about 38 per cent. over the catch of last year. It is a fact worthy of note that the principal catch was made over that portion of this district most favorable for the production of alewives, there being a number of unobstructed rivers having their head waters in lakes and still waters, and the time mackerel struck the coast would be about the time when the young alewives are descending to the salt water.

The mackerel caught were unusually large and fat, and the high price obtained for them went a long way to compensate for the short catch of deep-sea fish. The returns from Halifax County show 13,000 barrels caught, as compared with 8,000 last year ; the average, however, is 17,000 barrels. Guysboro' shows an increase of 10 per cent. over last year, but the catch is only one-half of an average. Antigonish shows 24 per cent. over last year, and 12 per cent. over an average.

SHAD.

The number of this fish caught has been so small during the past few years, that the fishery has been almost abandoned. The returns exhibit, however, a slight increase over last year, but they are caught only in the counties of Colchester, Cumberland, and Hants, showing a return of 535 barrels, againts an average of 3,410 barrels.

LOBSTERS.

It is pleasing to turn from statements of decline, the result of which, will likely be that the " woe ! woe ! " of the pessimist will be heard in the land, to the record of a fishery which has not gone backward—and that is the lobster. The returns show an increase of 17 per cent. over the catch of last year, being in value an increase of nearly $60,000.

Professor Rasch, president of the section for fisheries in the Royal Society for furthering the industries of Norway, presents the following in his report as the result of experiments carefully and skillfully made : " That a female lobster which has roe under the back part of its body in June is done hatching in September. That the hatching, from beginning to end, occupies a period of about three weeks. That the younger lobsters swimming near the surface are killed by violent rain. That the

summer hatching does not begin at the same time every year, which undoubtedly depends on the higher and lower temperature of water. That the newly hatched young of the lobster keep closely together near the surface of the water, and because little skilled in swimming, become an easy prey to their ennemies, and that young lobsters begin to go towards the bottom when about three to four weeks old ; and that there they soon assume their retrograde motion. It was shown that, when the young lobsters have so far developed as to seek the bottom, they can escape their enemies with comparative ease, partly on account of their quicker motions, and partly by hiding between the stones."

Prof. C. Bock, of Norway, says of this fish :—

"The lobster is a coast animal, and only stays where it can get a sufficient supply of food. Therefore, near the coast, and only as far from it as seaweed are found, amongst which it finds the animals which constitute its food. Its structure not being adapted for long journeys, even if it wanders it does not go far, moving in winter into a greater depth, and during summer into the shallow water near the coast."

The fact of the matter is, therefore, that a certain number of lobsters belong to a certain extent of coast, which, by propagating freely, may increase, if they have sufficient food, or decrease from a natural mortality or too much fishing ; and in this latter case the losses cannot be easily made up by lobsters coming in from adjoining districts. There can, consequently, be no doubt that the lobster can, on a given stretch of coast, be diminished to such a degree as to make lobster fishing unprofitale.

The Fishery Commissioners of England made a thorough inspection of the lobster fisheries of the English and Scottish coasts, and reported, in 1877, that on the whole they believe they are in the right in concluding that in small fisheries, or fisheries of a confined area, there has been a marked decrease of fish, while in large and exposed fisheries there has been no decrease whatever. Take, for example, the fisheries off the Lands End the Lizard and the Start. These fisheries comprise large areas of sea bottom, all of them in exposed situations, and the powers of man have hitherto been incapable of exhausting them.

Assuming these conclusions to be correct, it would appear that any regulation of the lobster fishery must necessarily be of a local character ; otherwise, we would have an exposed portion of the coast with a bottom naturally favorable for the abode of the lobster, and over which the fisheries would be productive and steady, needlessly restrained because another portion is easily exhausted. I am inclined to think that there are portions of the cost where extensive areas of algæ grow upon rocky bottom, which are therefore favorable localities for the breeding of lobsters and over which the fishing would not be exhausted if a close season from 1st July to 1st October were observed. I am of opinion such a close season would meet the support of the fishermen. The present law prohibits the catching of lobsters on the southern coast of Nova Scotia after 1st July, and upon the Straits of Northumberland after 15th July, until 31st December. The enforcement of this regulation is becoming more difficult and more expensive each year. In the early history of lobster canning, while the business was in the hands of large dealers, it was an easy matter to control close seasons. The factories being then the only place where they could be preserved, were directly under the eye of your officers. But things have changed. Now a class of men have been educated in canning fish, and it has been found that they resort to unfrequented islands and put the fish up there. Others catch their lobsters, boil them on some island or in the woods, and take them to their homes to can. That illicit canning meets with encouragement from large dealers seems beyond doubt ; for upon some of the cans seized by me on an island on the south shore of Nova Scotia were found the stamps of a large Portland firm. And it is probable that, the scarcity of other fish which compelled *some* of these people to fish this season for lobsters or starve, lent a sympathy to those engaged in the business which would not be extended to them in average years ; but it is nevertheless a fact that fishery officers receive little or no assistance from residents; indeed, any man who is known to have given assistance is subject to a mild species of boycott.

It would seem to be a paramount necessity that if a close season be proclaimed the law should be strictly enforced; otherwise, we have the law, abiding suffering at the hands of the lawless, and sometimes men disposed to be honest almost led into illegal fishing in self-defence.

FOOD OF DEEP-SEA FISHES.

This is a subject upon which there seems to be a very limited amount of information. One would naturally expect to find among fishermen a complete knowledge of this subject; but those who have studied the subject say that it is not a little remarkable that fishermen who are continually in contact with fish throughout the year know actually so little about them. To questions as to food of the various species, a negative answer is usually returned; and it is only occasionally that one more observant than the rest is found from whom satisfactory information can be obtained.

That deep-sea fish come upon the coast, either under the spawning impulse or in search of food, seems beyond question, and that an accurate knowledge of what constituted their food during the several seasons of the year might remove some questions from the realm of speculation to that of actual fact, and the possibility of securing information which might otherwise prove invaluable, lead me to suggest that means be taken to have a record for a season or two from fish taken upon the several grounds near the coast of what food is found in them, when caught.

The statistical returns are made up from overseers' reports, who give the aggregate quantities caught in their districts. It would add little to the cost, but much to the intrinsic value of the record, were the overseers required to give the inspector a detailed as well as an aggregate statement.

During the spawning seasons of fish there should be a daily examination of fish ways by a fishery officer, and a sworn return of its condition made to the inspector.

Under instructions, I have visited a number of the rivers in the district and have made a special report, recommending a number of fish-ways.

I have the honor to be, Sir,
Your obedient servant,

ROBT. HOCKIN
Inspector of Fisheries.

SYNOPSES OF OVERSEERS' REPORTS.

ANTIGONISH COUNTY.

Overseer John McDonald reports the total value of fish caught is slightly in excess of last year. The increase is due, first to having three lobster factories in operation, all doing a considerable business; second, to the high price offered for mackerel, which induced farmers and others living by the sea to engage in fishing. They, and a number of good fishermen from the southern shore and Arichat, C.B., selected Bayfield coast as their fishing ground during the fishing season.

There is a falling off in the catch of salmon which is difficult to account for. In this overseer's opinion, it is altogether due to prevailing winds, before and during the salmon fishing. If the wind blows towards the shore, the small fish on which salmon feed come to the coast, and generally remain there some time. The decrease in the catch of eels and smelts is principally due to the harbors being open during the greater part of last winter. During the past summer, and even up to the last of November, hake were exceedingly plentiful, but unfortunately fresh bait could not be had to the required amount, and much valuable fishing time was consequently lost to the fisherman. Cod and haddock show a small increase over last year. Herring struck the coast in the spring, and were very plenty; but during the summer the fishery was a failure.

Overseer McDonald endeavored at all times to ascertain how the fishery laws were observed, but finds it very difficult to get information that would lead to conviction. He was misled several times by secret information. All the fish-ways, except that on McGilvray's dam, require attention during the coming season. They are nearly all on the old principle, and totally out of repair. This officer visited the lobster factories and examined the fish on hand at the time, but found no desire to to overstep the law. He considers the presence of the fishery officer at the factories as often as possible as likely to prevent breaches of the law. The several wardens report that no violations of the law came to their knowledge within their districts.

COLCHESTER COUNTY

Overseer Henderson Gass thinks salmon are increasing in the rivers; but as they do not ascend until late in the season, it is very difficult to find out. Mackerel were scarce in the bay during the season, but herring have been very plentiful. Alewives ascended the river in about average quantities.

Oveerseer R. J. Pollock reports an increase of nearly 100 per cent. in his divisions—Lower Stewiacke, &c.—the season being favorable for fishing. There were some rumors of poaching, but he was unable to discover them, and thinks that the suggestion made in the inspector's report of year last, that special guardians be appointed, should be carried out.

Overseer J. W. Davison reports an increase in the shad fishery over last season, but still a very small catch as compared with former years, when four or five thousand barrels were exported. Salmon were more plentiful than for several years past. Other fish much the same as usual. This overseer recommends the appointment of a warden on Port à Pique River.

CUMBERLAND COUNTY

Overseer Wm. Murphy reports an increase in the catch of lobsters of 32,000 cans, put up by about the same number of hands as last year. The increase is partly due to their being able to can earlier, and partly to the fact that lobsters were more plentiful. Herring returned in large schools, and more were taken at Malagash than ever before. Had the inhabitants been prepared, they could have taken any quantity. Salmon appeared in increased numbers, and were very plenty. They could be seen at the head of tide in large schools, but the overseer does not think they went far up, owing to the extreme lowness of the river during the whole season. Smelts were scarce; there is a falling off in the catch. Alewives not so plentiful as last year, and of poorer quality. Oysters are becoming more plentiful, not having been so much fished during the past few years. Of other kinds of fish there has been an average catch. There is a good deal of dissatisfaction in his division on account of people not being allowed to fish for salmon. The inhabitants think the season should be extended.

Overseer Elijah Fowler reports a slight falling off in the yield of cod, haddock and herring. The first run of herring was not taken advantage of by those engaged in farming. Salmon more plentiful than last year, especially in the rivers and small streams. This officer reports that the fish-ladder at Young's dam, on Herbert River, does not reach the water, except at very high tides. This ladder has not been a success, and he recommends its being lengthened or removed to the centre of the stream.

Overseer Geo. W. Gilroy reports four fish-ways on River Philip, none of which are in efficient state. He does not think it necessary to require them to be put in order until a pass is built in the dam at Oxford, over which scarcely any salmon can pass. A pass for alewives was put on Black River, but it has never been efficient, the mouth of the fish-way being too high from the water at the time alewives are passing up. The quantity of fish taken was about the same as last year. The close seasons were fairly well observed.

GUYSBOROUGH COUNTY.

Overseer James A. Tory reports a falling off in some kinds of fish, but an increase in others, the whole aggregating an increase of $3,443 over last year. This is, however, far short of an average of former years, and a very unprofitable one for the fishermen. It will be severely felt by those who solely depend on the products of the ocean for their sustenance, as it succeeds the failure of last year. The decrease has been in salmon, line fish and bait used by boats. Mackerel, herring, alewives and lobsters, have increased, the others rating about the same. This overseer cannot account for the shortage in salmon, unless it be the dry, warm season which kept the rivers so low that the usual quantity of fresh water did not flow within their reach, and consequently they did not approach the shore, the usual place of netting them. A large portion of the catch of mackerel,which exceeds that of last year by 500 barrels, is to be credited to other fishing grounds, such as George's Bay, Cape Breton and Prince Edward Island.

The catch of alewives has materially increased, and will continue to do so if the rivers are kept clear of obstructions and the regulations respecting seining diligently carried out. The decline in cod fishing is owing to the withdrawal of banking vessels from that fishery, and along the western shore there was almost a total failure. There is an increase in the quantity of squid caught. Whether this is due to the fish having increased, this overseer cannot say; but the demand has, and fishermen have turned their attention to it. Along with squid, another profitable business is carried on in the sale of ice, both being required by the bankers of the Dominion and foreign countries. Lobsters seem to have taken a great leap over last year, there being an excess of nearly 104,000 cans, or one-eighth of the total catch. The fishery has heretofore shown a gradual decrease, and Mr. Tory, believes he is justified in the conclusion that illegal fishing has been carried on to a very large extent, leading to the destruction of over one and a-quarter million of small lobsters. Time will tell what effect this may have on next year's fishing, but he thinks if it is allowed to continue that, this fishery, so profitable to our people, will be speedily brought to an end. The river fisheries were not so good as usual, the water being very low. As soon as it rose, trout and salmon were seen ascending in considerable quantities.

Mr. Tory believes that some of the deep-sea fish are on their decline, and thinks from the wholesale destruction of the fish during their spawning season it cannot be otherwise. To perpetuate them, some regulations will have to be made, especially for herring and mackerel, and that the Americans deserve credit for their regulation respecting the catching of mackerel before the 1st of June. They ought, however, to have made it a little later in that month.

There are no wardens appointed for New Harbor Rivers, White Head Rivers, Canso and its vicinity, and the services of such officers are required in these localities.

Overseer Allan McQuarrie reports the decline in cod fishery this year as only apparent, the increase last year being due to imports from vessels not engaged in the fisheries this year. Salmon and alewives are getting fewer, the apparent cause being overfishing and insufficient protection. The streams are becoming exhausted and require re-stocking from the hatcheries. Herring, both this and last year, have been a failure, and the dependent fishermen are almost discouraged. Mr. McQuarrie considers them the poorest paid men in the district for their labor. There was a falling off in lobsters, but the shortness of the open season easily accounts for this. Fishermen have not the appliances they used to keep before the palmy days of lobster fishing, and are not in a position to prosecute the other fisheries; consequently, the poaching of lobsters has been very general, and every trick of the trade put in practice to evade the law. It was practised on a limited scale, however, and from a knowledge of their average circumstances, the overseer thinks that sheer necessity had very much to do with the matter. Lobster fishermen with whom he conversed are of the opinion that the rugged southern shore will stand a month or six weeks

fall fishing without material injury, and he entertains a strong impression of the same kind himself. Lobster fishing gave more trouble than the other fisheries combined, and something should be done to remove the cause of it before next season; otherwise, the whole shore is likely to become demoralized. He suggests the appointment of wardens at Wine and Indian Harbors, at Liscombe and Spanish Bay; also, at Marie Joseph and Ecum Secum, as the very fact of active men being located at the above named places would act as a check on poaching, and greatly help to bring guilty parties to justice.

The inland fisheries are fairly well protected. Serious obstructions, formerly referred to call for attention. These are at Indian harbor Beach and at the head of Country Harbour River. The experience of the last few years has proved that the present channel on the Indian Harbour Beach cannot be kept open without an enormous cost of $400 or $500 a year. By permission of the Department this officer asked for tenders for a new channel on the east side of the beach, where it is believed by practical men that there would be a good chance of its remaining open. He expected this could be opened for $50, but a hard substrata was discovered in the bottom, and a sum of over $200 was the lowest tender received. This is a very serious matter, requiring attention, as the stream is at present closed, and will remain so until the water rises in the lake above and forces a passage through the beach gravel. To complicate matters, the opening of the new channel necessitates the moving of a bridge on the stream, which the municipality will not do until there is a guarantee that the new channel will be opened.

The different fishways are in good working order, but two more are wanted, one at McKeen's Brook, Melrose, and another at Jordan's saw-mill.

The sawdust law is reluctantly observed by many, as it means an outlay to the miller, who will shirk it when possible.

This overseer has reason to believe that the wardens faithfully discharged their duties, and in every instance yield a cheerful assistance when called upon.

He must continue to raise his voice against purse-seining as a most pernicuous practice, which will end in a wholesale slaughter of our fisheries.

HALIFAX COUNTY.

Overseer John Fitzgerald reports that there were no herring on the coast when deep-sea fishing began, so that fishermen were unable to procure bait. Many of them had to abandon their usual calling and go in search of other employment. This partially accounts for the decrease in the yield of cod and other deep-sea fish. Mackerel struck in large schools all over this district, and a fair catch was obtained. There would have been considerable distress among the fishermen had it not been for this unusual and fortunate catch. Lobsters were more plentiful than last year and above the average size. This, Mr. Fitzgerald thinks, may be credited to the close season, which prevents their destruction during spawning time. The law was cheerfully complied with throughout the whole of this district.

Overseer George Rowlings reports that over three-fourths of the cod returned from his district were caught by vessels at North Bay and along the coast of Prince Edward Island. Fishermen complain very much of the scarcity of herring for bait, and no two of them agree as to the cause of these fish having, at least temporarily, left that part of the coast. He ascribes as the most probable cause the continual setting and hauling of lobster traps along the coast. More lobsters were caught in this district during the past year than in any other. If the same regulations are enforced next year offenders should be punished regardless of cost. Alewives were much more plentiful than last year. They are generally caught by the poorer class of farmers, and are a great help to them. The fish are not as well protected as could be desired; in fact, in many cases the wardens sadly neglect their duty. Fewer salmon were caught this year than last; but they were plentiful, especially in Musquodoboit River. Mr. A. B. Wilmot took a great many more than he did during the previous season for the Bedford hatchery, and a large number went up after he

had done fishing. The oyster bed at Musquodoboit Harbor seems to be in the same condition as it was last year. The prospects of success are apparently small.

PICTOU COUNTY.

Overseer Robt. Sutherland reports no signs of failure in the lobster fishery, the catch exceeding that of last year by some thousand cans. Codfish were scarce. Herring seemed plentiful at times, but owing to a less vigorous prosecution of the fishery not many were taken, those formerly engaged in it having sought other means of employment, such as lobster fishing. Salmon were said to be scarce, but there are evident signs of their return since efficient fish-ladders have been placed in the rivers. There are two fish-ladders on River John; another is required. The existing ladders have been kept open. The only violation of the law which came under this overseer's notice was that of a lobster packer canning undersized lobsters, and a fine was imposed.

The death of *Overseer D. G. McDonald*, an energetic and capable officer, took place late in the year. The returns from that district have been made up under the supervision of an experienced overseer.

DISTRICT No. 3.

ANNUAL REPORT ON THE FISHERIES OF DISTRICT No. 3, OF NOVA SCOTIA, COMPRISING THE COUNTIES OF KING'S, ANNAPOLIS, DIGBY, YARMOUTH, SHELBURNE, QUEEN'S AND LUNENBURG, FOR THE YEAR 1889, BY INSPECTOR J. R. KINNY.

YARMOUTH, N.S., 31st December, 1889.

Hon. CHARLES H. TUPPER,
Minister of Marine and Fisheries,
Ottawa.

SIR,—Herewith I have the honor of transmitting the returns showing the catch and value of fish and the product of the fisheries of this district, comprising the Counties of Annapolis, Digby, King's, Lunenburg, Queen's, Shelburne and Yarmouth, for the year just ended, together with a statement showing the number and value of vessels and boats employed in prosecuting the fisheries. These returns exhibit a decrease in the number of vessels and the value of the production, the relative difference between the years 1888 and 1889 being thus:—

No. of vessels, 1888	443
do 1889	399
A decrease of	44
Value of product, 1888	$4,798,918
do 1889	3,595,987
A decrease of	$1,202,931

This large deficit falling largely to the aggregate take of codfish, which item alone shows a decrease of 121,709, nearly one-half of which is the year's decrease in the take of Luenburg county.

SALMON.

shows a decrease of nearly one-half, when compared with the year 1888, the take of 1888 being 159,483 lbs., that of 1889, 88,230. It would be idle to adduce theories with

a view imparting information upon the much talked of and little known of question of the causes for the decrease in the catch of one kind of fish and the increase in another.

HERRINGS.

The take of 1889 shows a decrease of 34,000 barrels, as compared with 1888, while the catch in the counties of Queen's and Shelburne exhibit an increase of nearly 9,000 barrels.

ALEWIVES.

This fish shows a pleasing increase, the catch for 1889 being 4,500 barrels in excess of the previous year, the increase being almost wholly from the Gaspereaux and Tusket Rivers, where take of the salmon was greatly reduced in the past year. This fish has a greater value than would appear by its marketable quotation, inasmuch as it is used for codfish bait, and very often supplies a much felt want.

MACKEREL

would appear to be deserting our inshores, as each succeeding year the take grows smaller. The year just ended shows a falling off in this district alone of $90,000. Trap-net fishing has become an unprofitable industry. Many have abandoned this mode of fishing, and others would soon follow, but that they are living upon the hope that " something will turn up."

LOBSTERS.

The mode of taking care of these crustaceans, the manner in which they are exported, and the whole trade has, within a few years, undergone radical changes. The unlimited demand in the United States for live lobsters has stimulated the fishermen to adopt improved methods of fishing and expeditiously marketing the catch. The lobster packer can afford to buy only what the Massachusetts local law forbids the importation of; hence, the temptation to buy small lobsters, is so great that the scruples of the producer are easily overcome and the result is just what may be expected; that is to say, the frequent violation of the regulations. To rigidly enforce the regulations is, or should be, the duty of every fishery officer; but local officers are, as a general rule, useless as preventatives, inasmuch as they are poorly paid, are often fishermen themselves, or related to fishermen, and only human at best. I will have the honor of reporting specially on this question at an early date.

FISH-WAYS.

There were none constructed this year. Acting under your instructions, I am preparing a report on the rivers and fish-ways of the district, which report you will have during the month of January.

SAWDUST.

This much-vexed question is very rapidly becoming a non-debatable one. Mill owners are generally falling into line. Those who have cared to study the question, with a view of arriving at an intelligent conviction, have, in my opinion, concluded that fish cannot, as some would have us believe, thrive and reproduce their species with rotting slabs and decomposed hemlock bark as a fixed diet.

I have only had the honor of serving as an officer of your Department for the period of six months ; hence, I would not, at this time, presume to enlarge upon the many reasons which might be given for the seeming anomalies and apparently excentric habits of fish. Why mackerel are deserting our shores ; why codfish fight shy of the fishemen's hook or dislike his bait ; why alewives seem to often

prefer streams showing a scarcity of salmon ; why salmon are so uncertain in their movements, or why lobsters may be, and are, found in every month of the year unfit for human food, are questions which I prefer not to deal with at this moment. I would rather that the utilization of observable facts be the governing rule than that the intentions and instructions of your Department be hampered with hastily drawn conclusions from passing coincidences.

I am in possession of your instructions to report upon the condition of rivers in this district, and, if necessary, to suggest remedial changes for the better protection of the inland fisheries—all of which has my best attention, and will be reported upon early in the coming year.

I enclose herewith synopses of the salient points in the reports of the overseers of the district, all of which is respectfully submitted.

I have the honor to be, Sir,
Your obedient servant,

J. R. KINNEY,
Inspector of Fisheries.

SYNOPSES OF OVERSEERS' REPORTS.

ANNAPOLIS COUNTY.

Overseer Bailey, of Round Hill, reports a shortage in the catch of herring, and say, that nine-tenths of the fishermen blame the lobster traps for this. He thinks that, this contention of the herring fishermen is reasonable, and he believes that the increasing number of steamers plying on the Annapolis Basin injures the weir fisheries. Salmon is slightly on the increase, but he says he cannot hope for much improvement without having more fish-ways. M. Bailey urges the establishment of local or branch hatcheries. He say that, the sawdust regulations were fairly carried out, but that a number of mill owners require a lot of watching. He is very emphatic in his views on the sawdust question, and gives the Round Hill River as an instance of what can be done. He say that, since the Wooden Manufacture Co., of Round Hill, have been compelled to take care of their mill rubbish, the run of fish has more than doubled. He reports that, after an absence of twenty-five years, salmon have returned to the East Branch of Bear River, but that they cannot reach the spawning grounds, and he urges the placing of fish-ways in two or more places.

Overseer Carty, of Deep Brook, states that the Annapolis River gradually lessened in productiveness since lumbering has been on the increase. No matter how energetic the overseer, there will be traces of neglect, proceeding from the saw mills. He also says that the fish-ways on Nictaux River need repairs, a fact which he has already called attention to in previous reports.

DIGBY COUNTY.

Overseer Hanley, of Digby, reports a decrease in the season's catch. This, he says, may be attributed to several causes, the principal one probably being the scarcity of bait. Shad fishing in St. Mary's Bay was a total failure as was also the herring fishery in Digby Basin. No plausible cause can be assigned for this state of things. It may be that there are natural laws governing these matters, which are yet beyond human knowledge. This overseer suggests that some protection be given to salmon on Salmon River, and that a warden be appointed on that stream.

The regulations prohibiting trawling in St. Mary's Bay are opportune. Trap net fishing at St. Mary's Bay was a failure.

Overseer Collins, of Westport, reports a decrease in the catch of lobsters, probably caused by overfishing in previous years. He is opposed to winter fishing. The regulations were strictly enforced.

KING'S COUNTY.

Overeeer Reid, of Wolfville, reports the catch of alewives greater than for any year during the last twenty. Salmon, from some unknown cause, much less than in 1888. The fish-ladders at Benjamin mills, Nictaux River, proved all that could be expected, allowing the fish to pass through to their spawning grounds without difficulty. Large numbers of young alewives were observed on their way to sea.

Overseer Miller, of Canning, says that the catch of salmon was not equal to that of last year, it having been unusually large. A great many complaints were made about lobster traps, which are said to destroy the herring fishery altogether. While the traps are out the herring fishermen get no fish. If this is true it ought to be remedied, as the lobster fishermen are usually strangers who come in this country and take the bread out of the mouth of resident fishermen.

Mr. Miller reports that the Basin of Minas fishery shows no signs of improvement, it having been a complete failure during the past season. But, as the same thing has happened many years ago, some improvement may be looked for. The fishermen are law-abiding and honorable.

QUEEN'S COUNTY.

Overseer Sellon, of Liverpool, says that the catch of salmon was about the same as in 1888. Mackerel shows an increase. The yield of herring was the best for many years, with good prices. Cod fishing not so good last year, bait being scarce. The law was well observed.

Overseer Fitzgerald, of Mill Village, regrets being obliged to record a falling off in the catch of mackerel and codfish, due, no doubt, to causes which have produced similar effects elsewhere. There is also a decrease in the catch of lobsters. This was caused, not by scarcity of lobsters, but by the shortness of the season and unfavorable weather. The catch of alewives in Port Medway harbor and river was larger than last year, and these fish sold at remunerative prices as bait for bank fishing. The yield of salmon was smaller than last year. The reason for their scarcity was not due to any agency in the harbor or river, but in the sea, the nature of which we cannot more than conjecture. I recommend that salmon net-fishing be restricted to four days in each week. Mr. Fitzgerald urges the appointment of a fishery warden at Westfield, that being an important spawning ground, 17 or 18 miles from any officer.

SHELBURNE COUNTY.

Overseer McGill, of Shelburne, reports that there were seven vessels less employed in fishing than in 1888. A number of those employed returned from the Banks with less than one-half the usual quantity of fish. He apprehends that the number of vessels for 1890 will show a further decrease. Shore mackerel fishing was a failure. Herrings were abundant, the catch being upwards of 3,000 barrels in excess of that of 1888. The present lobster regulations are good, and will have a tendency to protect and foster this branch of fishing. Mr. McGill reports an improvement in the catch of alewives, and predicts that the time is not far when an abundance of these fish will be taken. They are largely used for bait, and prove a valuable aid to our cod fisheries. The fishery at Jordan River is a failure for alewives, and something should be done to improve it.

Overseer Goudey, of Barrington, reports a decrease in the catch of cod, which he attributes to the fact that many of the bankers feeling discouraged with their first trips put their vessels into the coasting trade. Nearly all the mackerel taken were shipped to the United States in ice, and brought good prices. The live lobster trade is increasing, and Mr. Goudey predicts a further enlargement of this business. Referring to the dam on Clyde River, he says that it has been partly cut away, but not sufficiently low for the passage of fish. Inasmuch as this structure has totally destroyed the usefulness of the fish-way, something should be done or there will ensue a serious loss to the residents. During the past year there were more alewives taken on that stream than in any one year since 1850.

LUNENBURG COUNTY.

Overseer Godard, of Bridgewater, reports that quite a number of young shad and alewives were seen coming down La Have River last fall, a thing not seen on that stream for over twenty years. From this fact, he concludes that the fish-ways at Davisons' second dam are a success. He believes that the expenditure of a small sum to improve the natural pass at Davison's lower dam would be productive of much good. Mr. Godard states that, the department's orders to have fish-passes through the six dams on the West Branch of La Have River will be enforced. The run of salmon up the La Have River, has been more numerous this year, although the catch was not. This the overseer can only account for, by the fact that fish find an easier passage up the river, and to a strict supervision of the waters, thus preventing violations of the Fisheries Act.

Overseer Evans, of Chester, says that the increase in the take of alewives is in excess of that of 1888, and that with a proper enforcement of the law he anticipates a further increase in the yield of this valuable fish. He urges the building of fish-ways at Mushamush, Boylan's and Wamboelt's dams, on the Gold River, and suggests that no salmon nets be allowed to be set after the 10th of June, as after that time they materially interfere with other fishing.

Overseer Soloman, of Lunenburg, says that the deep-sea fisheries have not been as successful as last year, owing to a scarcity of fish rather than to any inclination on the part of the fishermen and capitalists to abandon this industry. As a proof of this, he states that there are now in Lunenburg harbor six or seven new fishing schooners and several more on the stocks. Referring to the lobster fisheries, he suggests that these fish be allowed to be taken and used for domestic purposes from 31st of October to 31st of December. The small catch of salmon and alewives he ascribes to the pollution of the river by sawdust, &c.

YARMOUTH COUNTY.

Overseer Gardner, of Tusket, reports a shortage of $50,000 in his district, owing to a decrease in the cod and mackerel fisheries. The fishermen engaged in the lobster business are reported as having done well ; and, as a general rule, the regulations were fairly observed. The salmon fishery was poor, but the catch of alewives was splendid, many localities doubling their catch of 1888. Mr. Gardner reports that fully $10,000 pounds of hake have been taken from Eel Lake, something before unknown. The fish-ways in this district give satisfaction. Large quantities of young fish having been seen above the fish-ways at Bourque's Brook, which flows into Eel Lake.

The remaining portion of the County of Yarmouth, which is outside of Mr. Gardner's jurisdiction, exhibits a decrease in the take of cod, mackerel and salmon, the causes for which can only be guessed at. It is a notable fact that mackerel are rapidly failing; but they are an erratic fish, hence, I would not attempt a prediction for the future. Trap-net fishing, once so successful in this county, proved an almost total failure. Those holding on to that mode of fishing have been out of pocket for the last two or three years. Extensive preparations are being made for a live-lobster trade with the United States.

APPENDIX No. 3.—Continued.

NOVA SCOTIA.

STATISTICS OF FISHERIES.

NOVA SCOTIA—

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in and the Total Number of Men Employed, &c., in the

DISTRICT.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.								
	Vessels.				Boats.			Nets.								
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	Salmon, barrels.	Salmon, fresh, in ice, lbs.	Salmon, in cans, lbs.	Mackerel, barrels.	Herring, barrels.	Herring, smoked, in boxes.
Cape Breton Co.			$			$			$						
From Marion Bridge to False Bay Beach	1	18	400	3	28	360	48	2100	630	....	1520	....	16	65	....
From False Bay Beach to Long Beach	3	30	600	15	37	600	58	4100	1485	....	1000	60	355	1173	....
From Long Beach to Big and Little Glace Bay and Bridgeport	....	....	....	....	21	500	42	1380	537	....	....	....	6	135	....
From Lingan to South Bar and South side of Sydney River	2	22	600	7	49	1636	87	3200	1280	....	750	....	7	261	....
From Sydney to N.W. Arm, Point Edward, Coxheath and Sydney Forks River	....	....	....	....	34	380	44	1800	536	....	12	....	3	105	120
Gabarous	1	14	300	5	64	4840	192	6980	3490	....	....	....	256	448	....
Belfry	....	....	....	....	4	240	12	400	200	....	....	....	20	50	....
Kennington	....	....	....	....	9	270	28	1000	500	....	....	....	30	54	....
Louisburg	....	....	....	....	37	3700	111	5600	2800	....	....	....	200	259	....
Big Lorraine	....	....	....	....	32	3000	96	4800	2400	....	100	....	200	230	....
Little Lorraine	....	....	....	....	20	1200	60	2000	1000	....	60	....	100	160	....
Baulin	....	....	....	....	9	540	27	450	225	....	....	....	20	40	....
Grand Mira	....	....	....	....	20	400	30	540	270	....	100	....	....	....	....
East Bay and Big Pond	....	....	....	....	21	210	40	400	200	....	....	....	....	80	....
North of East Bay	....	....	....	....	10	200	20	500	140	....	....	....	....	500	....
Escasoni	....	....	....	....	5	100	10	250	70	....	....	....	....	400	....
From George's River to Lloyd's Cove	10	200	2800	70	67	1340	134	3350	968	....	550	....	71	640	....
North Sydney to N.W. Arm	2	30	240	6	21	420	42	1050	294	....	....	....	40	320	....
From Boisdale to Grand Narrows	....	....	....	....	52	1040	104	2600	728	....	150	....	5	70	....
Mainadieu	....	....	....	....	50	3000	120	6000	3000	3	....	1200	240	820	....
Mira Bay	....	....	....	....	43	1720	92	6500	3250	6	1500	....	259	854	....
Scatarie	....	....	....	....	25	2000	100	4000	2000	4	....	....	112	300	....
Total	19	314	4940	106	658	27696	1497	58950	26053	13	5742	1260	1940	6964	120

District No. 1.

the Fisheries, Quantity and Value of Fishing Materials, Kinds and Quantities of Fish, **Province of Nova Scotia**, for the Year 1889.

Kinds of Fish.														Fish Products.			Value.
Alewives, barrels.	Cod, cwt.	Cod Tongues and Sounds, brls.	Hake and Pollock, cwt.	Hake Sounds, lbs.	Haddock, cwt.	Halibut, lbs.	Shad, barrels.	Trout, lbs.	Squid, barrels.	Smelt, lbs.	Eels, barrels.	Oysters, barrels.	Lobsters, cans.	Fish Oil, gallons.	Fish Guano, tons.	Fish used as bait, barrels.	
253	52	....	25	....	5	500	2	2400	....	2000	23	14	.....	26	2	13	3,052 40
18	1870	....	....	....	320	14000	....	700	....	2500	50	....	43500	935	63	500	29,106 00
10	270	....	....	....	23	3800	....	2000	....	3500	26	....	.....	133	2	68	3,102 20
6	690	....	....	....	116	6500	....	500	....	4500	55	....	.....	345	17	172	6,891 00
95	40	....	....	....	5	500	....	3600	80	8900	48	....	.....	20	....	10	2,551 90
....	2060	....	....	....	128	.....	....	.....	....	.....	....	....	72432	1000	....	50	23,550 84
....	80	....	....	....	.....	.....	....	.....	....	1000	....	....	.....	40	....	10	911 00
....	135	....	....	....	45	.....	....	.....	....	.....	....	....	.....	70	....	10	1,429 00
130	1110	....	....	....	740	.....	....	.....	....	.....	..	....	27360	600	....	30	15,589 20
....	800	....	....	....	800	.....	....	50	....	.....	....	....	.....	500	....	20	10,575 00
....	500	....	10	....	500	....	....	.....	....	.....	....	....	.....	320	....	10	6,335 00
....	180	....	....	....	145	.....	....	.....	....	.....	....	....	.....	100	....	10	1,815 00
100	.....	....	....	....	.....	.....	2	150	....	600	....	....	.....	.....	....	....	541 00
6	100	....	....	....	.....	.....	....	100	....	200	5	4	.....	40	....	....	847 00
....	400	....	....	....	.....	.....	....	1000	....	.....	6	10	.....	75	....	14	3,841 00
....	280	....	....	....	.....	.....	....	.....	....	.....	6	....	.....	52	....	11	2,817 30
20	3510	....	....	....	383	4160	....	560	....	1350	31	9	52153	659	....	141	27,338 46
35	610	....	....	....	10	1000	....	200	....	1200	12	....	.....	118	....	25	4,914 20
....	470	....	....	....	.....	.....	....	1210	....	3000	8	....	.....	87	....	18	2,709 80
25	1420	4	25	40	390	6240	....	.....	7	.....	4	....	37680	820	...	200	20,482 10
25	1390	....	20	....	250	7150	....	.....	10	.....	2	....	.....	604	....	150	15,691 10
10	1512	4	10	....	....	8000	....	.....	15	.....	....	....	.....	1000	....	90	10,512 00
																	*691 20
733	17479	8	90	40	3860	51850	4	12470	112	28750	276	37	233125	7544	84	1552	195,293 70

* Mainadieu—Herring in cans, 5,760 cans, at 12 cts.

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in

DISTRICT.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.						
	Vessels.				Boats.			Nets.						
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	Salmon, barrels.	Salmon, fresh, in ice, lbs.	Salmon, in cans, lbs.	Mackerel, barrels.	Mackerel, in cans.
Inverness Co.			$			$			$					
Port Hood	1	40	400	7	140	4000	400	25000	8000	....	1000	....	200	.....
Sea Side	....	....	.....	....	30	360	90	4000	1500	....	.....	....	100	.....
Little Judique	....	....	.....	....	44	580	140	6000	3000	....	.....	....	40	.....
Judique	....	....	.....	....	50	500	130	4000	1800	....	.....	....	50	.....
Long Point	....	....	.....	....	25	250	70	4000	1800	....	.....	....	60	.....
Cregnish	....	....	.....	....	20	200	45	2500	1000	....	2000	....	20	.....
Low Point	....	....	.....	....	20	200	40	2000	800	....	.....	....	10	.....
Whycocomagh	....	....	.....	....	15	180	30	200	60	....	.....	....	....	.....
Light Point	....	....	.....	....	8	80	20	400	140	....	.....	....	12	.....
Coal Mines, Mabou	....	....	.....	....	20	260	40	1000	500	....	2000	100	16	.....
Mabou Harbor	....	....	.....	....	30	500	90	2000	1000	....	1000	200	20	.....
Little Harbor	....	....	.....	....	16	160	30	1200	560	....	.....	....	10	.....
Port Hawkesbury	6	436	12000	72	30	500	70	19000	4500	10	6000	672	1882	18720
Port Hastings	....	....	.....	....	20	300	60	15000	3500	....	.....	....	20	.....
West Bay	....	....	.....	....	15	180	22	800	475	....	.....	....	....	.....
North Mountain	....	....	.....	....	40	500	80	3500	1900	....	.....	....	....	.....
Malagawatch	....	....	.....	....	34	440	68	2000	1100	....	.....	....	....	.....
Boom	....	....	.....	....	14	200	28	1200	600	....	.....	....	....	.....
Basin R. Dennis	....	....	.....	....	12	120	20	720	450	....	.....	....	....	.....
River Inhabitants	....	....	.....	....	4	40	8	600	300	....	.....	....	....	.....
S. Side Whycocomagh	....	....	.....	....	6	60	12	900	400	....	.....	....	....	.....
River Dennis	....	....	.....	....	2	10	4	.....	.....	....	.....	....	....	.....
Delaney's Cove	....	....	.....	....	6	320	18	650	340	....	.....	....	60	.....
Doucett's Cove	....	....	.....	....	6	300	18	800	600	....	840	....	74	.....
East Margaree	....	....	.....	....	26	1900	86	5800	4600	....	1420	....	212	.....
West Margaree	6	131	5240	44	5	220	15	2430	1650	....	31990	....	104	.....
Margaree Forks	....	....	.....	....	....	.....	....	.....	.....	....	1600	....	....	.....
Margaree River	....	....	.....	....	....	.....	....	.....	.....	....	480	....	....	.....
Margaree Island	....	....	.....	....	24	640	46	540	280	....	.....	....	244	.....
Broad Cove Marsh	....	....	.....	....	12	460	25	420	180	....	.....	....	58	.....
Port Bain	....	....	.....	....	6	200	15	360	140	....	.....	....	8	.....
Broad Cove Shore	....	....	.....	....	11	220	28	630	400	....	.....	....	65	.....
Coal Mines	....	....	.....	....	4	160	9	440	310	....	.....	960	12	.....
Lake outlet and Lake Bain	....	....	.....	....	5	34	10	140	45	....	.....	....	....	.....
Trout Brook	....	....	.....	....	....	.....	....	.....	.....	....	.....	....	....	.....
Eastern Harbor	2	64	500	12	91	3700	283	4550	1655	8	5400	....	541	.....
Cape Rouge	....	....	.....	....	18	650	54	1000	325	....	.....	....	250	.....
Pleasant Bay	....	....	.....	....	19	600	76	800	300	....	.....	4800	300	.....
Cheticamp Point	....	....	.....	....	45	2200	170	2200	900	11	.....	....	4	.....
Big Pond	2	54	700	15	25	925	78	3200	3700	3	2000	....	225	.....
Friar Head	....	....	.....	....	14	500	44	1500	2000	....	.....	....	120	.....
Mill Brook	....	....	.....	....	5	200	15	700	750	....	.....	....	50	.....
N. E. Margaree	....	....	.....	....	....	.....	....	.....	.....	....	2000	....	....	.....
Total	17	725	18840	150	917	20849	2487	122180	51560	32	57730	6732	4767	18720

the Fisheries, Quantity and Value of Fishing Material, &c.—**Nova Scotia**—*Con.*

Kinds of Fish.														Fish Products.			Value.
Herrings, barrels.	Alewives, barrels.	Cod, cwt.	Cod Tongues and Sounds, brls.	Hake and Pollock, cwt.	Hake Sounds, lbs.	Haddock, cwt.	Halibut, lbs.	Trout, lbs.	Squid, barrels.	Smelt, lbs.	Eels, barrels.	Oysters, barrels.	Lobsters, cans.	Fish Oil, gallons.	Fish used as bait, barrels.	Fish used as Manure, barrels.	$ cts.
1000	....	4000	....	1000	400	400	....	1000	300	1500	40	....	46285	2400	600	....	38,404 20
400	....	400	....	500	100	200	....	.....	100	.....	.....	....	33126	1000	300	.. .	12,825 12
2400	....	600	....	200	....	300	....	1000	40	1000	60	....	.....	300	400	....	16,240 00
1000	....	300	....	100	....	60	....	1500	...	.....	30	....	35808	200	300	....	11,866 96
400	....	240	....	....	....	40	....	1500	40	2000	20	....	.....	100	50	....	4,365 00
40	....	60	....	....	....	20	....	.....	....	.....	....	..	.....	20	20	....	1,218 00
40	....	30	....	....	....	10	....	1000	....	1000	20	....	.....	20	20	....	868 00
40	50	200	....	....	....	....	....	2000	....	1000	80	100	.....	50	...	....	2,565 00
60	....	200	....	100	....	100	....	.....	....	.....	..	..	.....	100	40	....	2,120 00
70	....	500	....	120	....	160	300	1000	20	1000	20	....	10388	200	60	..	5,941 56
60	....	600	....	40	....	180	1400	1000	30	1000	20	10	9760	300	80	....	6,111 20
50	....	200	....	100	....	60	....	.....	20	.....	....	....	.....	150	50	....	2,005 00
1200	180	2500	30	150	30	300	....	1000	100	3500	35	....	.....	1200	50	1000	51,792 20
90	....	1180	50	....	....	100	....	1000	50	6000	80	....	.....	400	30	500	8.195 00
1275	....	300	....	....	....	....	....	2000	....	1500	40	400	.....	130	20	....	8,272 00
1000	....	350	....	....	....	....	....	2500	....	1800	38	300	.....	150	15	....	7,120 50
200	....	225	....	....	....	....	....	3000	....	4000	65	250	.....	80	12	....	3,690 00
175	....	200	....	....	....	....	....	1500	....	35000	50	280	.... ..	60	15	....	5,136 50
125	....	150	....	....	....	....	....	2000	....	35000	50	220	.....	35	12	....	4,592 00
.....	.....	.....	....	....	....	....	....	1500	....	1800	35	....	.....	.....	....	....	608 00
35	15	200	....	....	....	....	....	2300	....	2500	85	....	.....	.....	....	....	2,237 50
....	....	.....	....	....	....	....	....	3800	....	2800	55	....	.....	.....	....	....	1,098 00
54	....	530	....	6	....	56	400	.....	....	.....	...	....	.....	290	20	....	3,670 00
68	...	680	....	8	....	68	600	.....	....	.....	....	....	.....	360	24	....	4,814 00
420	54	3680	....	28	....	352	800	682	.. .	.....	14	....	.....	896	86	....	22,402 00
100	126	2940	....	12	....	286	2124	456	....	.....	10	....	6144	1758	95	....	23,817 98
20	110	53	....	....	....	....	....	690	....	.....	4	....	.....	146	....	....	1,274 40
.....	188	.....	....	....	....	....	....	1875	....	....	14	..	.....	.....	....	....	1,269 50
140	....	254	....	24	....	49	842	.....	....	...	....	....	.....	120	49	....	5,733 70
48	....	176	....	....	....	51	....	.....	....	.....	....	....	.....	86	32	....	2,052 40
34	....	98	....	....	....	15	....	.....	....	.....	....	....	11616	26	16	....	2,136 32
142	24	261	....	....	....	57	....	.....	....	.....	....	....	.....	214	25	....	3,046 10
25	...	92	....	....	....	14	....	.....	....	.....	....	....	2106	54	12	....	1,140 32
... ..	64	.....	....	....	....	....	....	860	....	.....	24	....	.....	.....	....	....	614 00
.....	....	.....	....	....	....	....	....	13400	....	.....	....	....	.....	.....	....	....	1,340 00
210	....	7261	....	....	335	228	....	.....	....	.....	....	....	9744	1650	40	....	42,331 28
60	....	450	....	....	200	300	....	.. ..	....	.....	....	....	.....	500	60	....	7,480 00
50	....	300	....	....	...	50	....	.....	....	.....	....	....	20160	300	200	....	9,659 20
.....	....	4600	....	....	500	200	....	.....	....	.....	....	....	.....	2560	....	....	20,960 00
70	....	2600	....	....	50	290	....	.....	....	.....	....	....	.....	1200	80	....	16,313 00
20	....	1200	....	....	40	150	....	.....	....	.....	....	....	.....	800	....	....	7,640 00
10	....	400	....	....	10	50	....	.....	....	.....	....	....	.....	150	....	....	2,660 00
.....	....	.....	....	....	....	....	....	3000	....	.. ..	....	....	. ..	.....	....	....	700 00
11131	811	38010	80	2388	1665	4143	6466	51563	700	102400	889	1560	185137	18005	2813	1500	378,326 54

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in

DISTRICT.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.	
	Vessels.				Boats.			Nets.	
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.
Richmond Co.			$			$			
Arichat	2	80	1200	20	60	800	120	50000	6000
West Arichat	1	40	600	6	90	1000	150	30000	4000
Petit de Grat	1	30	500	6	100	1000	180	80000	9000
Cape Au Guet					60	750	150	50000	7000
Port Royal	2	40	900	12	12	400	24	20000	3000
D'Escousse	18	750	18000	212	40	150	90	50000	7000
Polimand	3	120	3730	30	10	100	20	1000	4000
Port Richmond	4	180	4000	40	10	100	20	1000	4000
Cape Le Rond	1	45	800	15	40	400	60	5000	3000
Rocky Bay					40	600	80	8000	4000
Little Anse					50	800	100	8000	4000
Gros Nez	1	40	600	10	60	900	100	8000	4000
River Inhabitants	3	120	1900	18	20	200	20	9000	5000
Black River					20	200	20	900	400
Lower D'Escousse	4	160	2300	40	40	200	80	1000	500
Martinique and Lennox Ferry					12	400	24	1000	500
Fourchu	1	15	100	3	27	1012	81	3240	648
Framboise					15	300	45	2520	504
St. Esprit					8	192	20	2880	576
L'Archevêque					9	216	18	2520	504
Grand River					30	750	62	11400	2280
Point Micheau					12	240	25	2500	700
L'Ardoise					180	3800	370	15800	10900
St. Peter's Island					56	1080	112	7000	3980
St. Peter's	4	88	1300	22	35	575	70	8000	1500
River Bourgeois	25	620	12400	175	21	250	25	2550	750
Total	70	2328	48330	609	1057	16415	2066	381310	87742

the Fisheries, Quantity and Value of Fishing Material, &c.—**Nova Scotia**—*Con.*

Kinds of Fish.												Fish Products.		Value.
Salmon, barrels.	Mackerel, barrels.	Mackerel, in cans.	Herring, barrels.	Alewives, barrels.	Cod, cwt.	Cod Tongues and Sounds, brls.	Hake and Pollock, cwt.	Haddock, cwt.	Smelt, lbs.	Eels, barrels.	Lobsters, cans.	Fish Oil, gallons.	Fish used as bait, barrels.	
														$ cts.
....	100	2000	3000	200	1000	10	25	2000	.....	.....	300000	50	10	62,875 00
....	50	.....	.....	100	600	10	.....	.....	800	10	200500	60	10	27,947 00
2	200	2000	400	50	800	20	.....	700	.....	....	600000	60	10	83,336 00
....	20	.....	600	20	1000	10	....	1500	.....	.....	.....	70	10	12,933 00
....	10	1000	400	10	500	5	.....	50	1000	.....	.....	50	10	4,260 00
....	20	.....	200	.....	40000	60	.....	100	.....	.....	30000	200	30	165,825 00
....	....	.....	20	.....	5000	35	.....	.....	.....	.....	.....	600	10	20,685 00
....	.....	.....	60	40	600	10	.....	.....	....	30	.....	50	10	3,255 00
....	30	....	400	.....	200	5	.....	100	.....	10	80000	40	10	13,031 00
....	80	.....	100	.....	100	5	.....	100	.....	.....	.....	50	10	2,485 00
....	100	.....	200	.....	700	10	....	600	.....	.....	.....	40	10	7,631 00
....	300	.....	300	.....	200	10	.....	300	.....	.....	.....	30	10	7,827 00
....	....	.....	200	60	100	5	.....	.....	.....	20	.....	20	10	1,743 00
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	40	.....	.....	.....	720 00
....	10	.....	100	30	3000	20	.....	60	.....	.....	.....	10	10	13,144 00
....	40	.....	100	20	.....	....	.....	.....	.....	80	.....	.....	....	1,890 00
....	81	.....	81	.....	341	.....	.....	.....	.....	.....	86400	320	....	13,399 00
....	93	.....	87	.....	105	.....	.....	.....	.....	.....	.....	70	....	2,191 00
....	48	.....	80	4	48	.....	....	.....	.....	....	.....	34	....	1,263 60
....	45	.....	72	5	63	.....	.....	.....	.....	.....	.....	38	....	1,252 70
....	270	.....	300	30	120	.....	.....	.....	.....	.....	.....	65	....	5,891 00
....	82	.....	120	9	220	2	.....	40	.....	.....	.....	75	....	2,840 00
4	900	.....	960	370	4000	.....	.....	2500	.....	.....	.....	2550	....	46,089 00
....	20	.....	200	60	500	.....	.....	200	.....	6	120000	300	....	18,750 00
....	300	.....	100	10	850	.....	.....	.....	.....	.....	.....	370	....	8,493 00
....	15	.....	10	10	3700	.....	.....	100	.....	20	.....	2200	....	16,590 00
														*20,000 00
26	2814	5000	8090	1028	63747	217	25	8350	1800	216	1416900	7352	160	566,346 80

* Amount used for home consumption, not included above.

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in

DISTRICT.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.	
	Vessels.				Boats.			Nets.	
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.
Victoria Co.			$			$			$
Englishtown	2	30	1100	8	52	1040	104	3400	1220
Black Head	....	.....	.....	.....	10	120	20	200	468
Bird Island	....	.....	.....	.....	112	5600	336	18600	9800
Barasois	....	.....	.....	.....	15	180	30	1085	450
Indian Brook	....	.....	.....	.....	20	240	40	1920	800
Little River	....	.....	.....	.....	21	240	42	2160	630
Breeding Cove	....	.....	.....	.....	15	225	30	1800	750
French River	....	.....	.....	.....	14	210	28	1680	700
Wreck Cove	....	.....	.....	.....	9	90	18	1080	450
Path End	....	.....	.....	.....	8	80	16	768	384
South Bay Ingonish	4	56	800	12	120	4200	360	9216	4608
North Bay Ingonish	3	42	600	9	80	2000	160	8112	4056
Ingonish Island	....	....	.....	.....	6	90	3	240	120
Rocky Side St. Ann's	....	.....	.....	.....	15	150	30	1800	750
South Gut	....	.....	.....	.....	10	100	20	1200	500
North Gut	....	.....	.....	.....	9	90	18	1080	450
Munroe's Point	....	.....	.....	.....	31	310	62	3720	1550
Goose Cove	....	.....	....	.....	8	80	16	960	400
North River	....	.....	.....	.....	40	400	80	4800	2000
Meat Cove	....	.....	.....	.....	14	280	28	528	288
Wreck Cove	....	.....	.....	.....	11	220	22	484	264
Bay St. Lawrence Pond	....	.....	.....	.....	28	560	56	1276	696
North Harbor	....	.....	.....	.....	12	240	24	660	360
White Point	....	....	.....	.....	50	1000	100	3256	1776
New Haven	....	.....	.....	.....	34	816	68	2224	1224
Neil's Harbor	....	.....	.....	.....	40	960	80	2640	1440
Green Cove	....	.....	.....	.....	20	400	40	1320	720
S. S. Little Narrows	....	.....	.....	.....	5	60	8	220	60
Grand Narrows	....	.....	.....	.....	27	394	75	740	440
Washabuck	....	.....	.....	.....	5	60	10	170	85
Baddeck	....	.....	.....	.....	4	60	4	200	50
Boularderie	....	.....	.....	.....	3	42	4	230	115
Great Bras d'Or	....	.....	.....	.....	24	290	48	1300	320
New Campbelton	....	.....	.....	.....	48	960	40	1400	720
Total	9	128	2500	29	920	21787	2020	80469	38644

the Fisheries, Quantity and Value of Fishing Material, &c.—**Nova Scotia**—*Con.*

Kinds of Fish.													Fish Products.		Value.
Salmon, barrels.	Mackerel, barrels.	Herrings, barrels.	Alewives, barrels.	Cod cwt.	Hake and Pollock, cwt.	Hake Sounds, lbs.	Haddock, cwt.	Squid, barrels.	Smelt, lbs.	Eels, barrels.	Oysters, barrels.	Lobsters, cans.	Fish Oil, gallons.	Fish used as bait, barrels.	$ cts.
50	100	550	....	570	60	100	85	3010	.....	....	.....	.....	285	156	19,848 00
18	50	90	....	150	....	....	15	30	.....	....	.....	.....	75	10	2,223 00
10	400	600	....	672	....	....	46	300	.....	....	.....	....	334	236	13,119 60
....	50	150	....	80	....	....	36	250	.....	....	.....	.....	40	45	2,897 50
....	250	200	...	100	....	....	9	40	....	....	.....	.....	50	60	5,256 00
....	105	180	....	240	....	....	69	42	.....	....	.....	.....	120	63	3,841 50
....	90	120	....	270	....	....	75	30	.....	....	.....	.....	135	45	3,451 50
....	84	56	....	252	....	....	56	28	.....	....	.....	.....	126	42	2,941 40
....	54	45	....	135	....	....	45	18	.....	....	.....	....	67	18	1,835 80
30	48	48	....	120	....	....	32	16	.....	....	...	.....	68	16	2,115 20
50	510	640	...	6400	....	....	1050	840	.....	....	.....	7200	3200	492	47,052 00
12	178	836	....	4800	....	....	110	350	.....	....	.....	....	2400	250	28,581 00
5	12	50	....	400	....	....	120	12	.....	....	.....	.....	200	30	2,713 00
25	30	300	....	30	....	.....	.....	30	.....	...	...	.....	15	5	2,303 00
....	.....	200	....	.....	....	.....	.....	200	.....	....	.....	.....	.....	.....	1,600 00
13	9	171	....	36	....	....	... ..	150	.....	....	....	.....	18	5	1,785 70
12	62	558	....	124	....	....	.... .	217	.....	....	.....	.....	62	20	4,772 80
6	16	160	....	24	....	....	.....	24	.....	....	.....	.....	12	8	1,184 80
9	40	200	....	120	....	....	.....	120	.....	....	.....	.....	40	6	2,529 00
....	110	14	....	300	....	...	.....	.....	.....	....	.....	19200	220	40	5,358 00
7	129	15	....	325	....	....	.....	.....	.....	....	.....	.....	240	32	3,551 00
....	196	25	....	500	....	....	.....	.....	.....	....	.....	.....	350	112	5,348 00
11	296	18	....	433	....	....	.....	.....	.....	....	.....	.....	300	54	6,621 00
8	263	19	....	1850	....	....	.....	700	.....	....	.....	.....	1540	275	15,377 50
...	100	50	....	3300	....	....	.....	....	.....	....	.....	.....	3000	250	16,475 00
....	6	55	....	3300	....	....	.....	.....	.....	....	.....	.....	3000	275	15,122 50
7	100	130	....	1200	....	....	100	.....	.....	....	.....	.....	700	140	7,822 00
....	10	16	4	80	....	....	.....	.....	2100	...	232	.....	30	4	1,392 00
....	70	470	13	350	....	....	.....	.....	850	15	129	.....	150	90	5,171 50
....	.....	80	....	90	....	....	.....	.....	900	7	81	.....	35	6	1,070 00
7	10	15	....	55	....	...	.....	10	.....	....	.....	.....	15	.....	588 00
3	.....	90	....	21	....	....	.....	.....	.....	....	.....	.....	10	.....	496 00
5	40	280	....	302	....	....	75	.....	.....	....	.....	.....	150	150	3,593 00
6	30	300	....	305	....	....	140	180	.....	....	.....	.... .	280	145	4,575 50
294	3448	6731	17	26934	60	100	2063	6597	3850	22	442	26400	17267	3080	242,612 30

RECAPITULATION

Of the Yield and Value of the Fisheries of the Island of **Cape Breton**, for the Year 1889.

Kinds of Products.	Quantities.	Rate.	Value.
		$ cts.	$ cts.
Salmon, pickled ... Brls.	365	16 00	5,840 00
do fresh, in ice ... Lbs.	63,472	0 20	12,694 40
do ... Cans	7,992	0 15	1,198 80
Mackerel, pickled ... Brls.	12,969	15 00	194,535 00
do ... Cans.	23,720	0 12	2,846 40
Herrings, pickled ... Brls.	32,916	4 00	131,664 00
do smoked ... Boxes.	120	0 25	30 00
do ... Cans.	5,760	0 12	691 20
Alewives ... Brls.	2,589	4 50	11,650 50
Cod, dried ... Cwt.	146,170	4 00	584,680 00
Cod Tongues and Sounds ... Brls.	305	10 00	3,050 00
Hake and Pollack ... Cwt.	2,563	4 00	10,252 00
Hake Sounds ... Lbs.	1,805	1 00	1,805 00
Haddock ... Cwt.	18,416	4 00	73,664 00
Halibut ... Lbs.	58,316	0 10	5,831 60
Shad ... Brls.	4	10 00	40 00
Trout ... Lbs.	64,033	0 10	6,403 30
Squid ... Brls.	7,409	4 00	29,636 00
Smelt ...	136,800	0 06	8,208 00
Eels ... Brls.	1,403	10 00	14,030 00
Oysters ... "	2,039	3 00	6,117 00
Lobsters, preserved ... Cans.	1,861,562	0 12	223,387 44
Fish Oil ... Galls.	50,168	0 40	20,067 20
do Guano ... Tons.	84	25 00	2,100 00
do used as bait ... Brls.	7,605	1 50	11,407 50
do do manure ... "	1,500	0 50	750 00
do do for home consumption in Richmond County ...	...	...	20,000 00
Total ...	...	...	1,382,579 34

COMPARATIVE STATEMENT of the Value of Fisheries for the Four Counties of the Island of **Cape Breton,** for the Years 1888 and 1889.

Counties.	1888.	1889.	Decrease.	Increase.
	$ cts.	$ cts.	$ cts.	$ cts.
Cape Breton	271,538 68	195,293 70	76,244 98	
Inverness	342,694 96	378,326 54		35,631 58
Richmond	644,101 54	566,346 80	77,754 74	
Victoria	223,652 90	242,612 30		18,959 40
Total	1,481,988 08	1,382,579 34	153,999 72	54,590 98
Decrease			99,408 74	

TABLE showing the Number and Value of Vessels and Boats, Nets and Seines, &c., engaged in the Fisheries of the Island of **Cape Breton,** and the Approximate Estimates of the Value of other Material not included in the Returns for 1889.

Material.	Value.	Total.
	$	$
115 vessels	74,610	
3,552 boats	88,747	
642,909 fathoms of nets	203,999	
		367,356
Canning establishments	58,426	
Seines (not included in returns)	5,630	
Lobster traps	32,450	
Hand lines, trawls, &c	33,275	
Steamers, smacks, punts, canoes, &c	13,782	
Fishing piers, houses and other sundries	57,300	
		200,863
Total		568,219

NOVA SCOTIA—

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in and the Total Number of Men Employed in the

DISTRICT.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.						
	Vessels.				Boats.			Nets.		Weirs.				
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	No.	Value.	Salmon, fresh, in ice, lbs.	Mackerel, barrels.	Herrings, barrels.
			$			$			$		$			
Antigonish Co.														
Tracadie	..	..	..	..	70	2000	155	34000	14000	..	..	6000	1450	100
Antigonish	..	..	..	..	40	900	79	20000	9000	..	..	20000	60	30
Morristown	..	..	..	..	82	2200	170	41000	18000	..	..	1200	200	150
Arisaig	..	..	..	..	62	1500	135	32000	12000	..	..	9000	109	150
Totals	..	..	..	..	254	6600	539	127000	53000	..	..	47000	1819	430
Value $	..	..	..	..	..	..	..	..	..	..	..	9400	21828	1935
Colchester Co.														
Stirling	..	..	..	..	3	60	11	600	500	..	..	100	6	40
Lower Stewiacke	..	..	..	..	12	72	12	180	105	..	..	1800	.....	...
Forest Glen	..	..	..	..	5	30	5	83	60	..	..	1000	.....	....
Middle Stewiacke	..	..	..	..	5	30	5	40	30	..	..	500	.....	....
Masstown	..	..	..	..	4	150	8	1000	160	..	..	2325	.....	....
Little Dyke	..	..	..	..	7	210	14	2100	245	..	...	1500	.....	....
Great Village	..	..	..	..	3	90	6	900	95	..	..	1550	.....	....
Great Village Point	..	..	..	..	3	90	6	850	85	..	..	1700	....	....
Highland Village	..	..	..	..	5	150	10	1500	200	..	..	2500	.....	....
Five Houses	..	..	..	..	1	30	2	300	50	..	..	500	.....	....
Birch Hill	..	..	..	..	..	..	..	..	..	1	400	.....	....	....
Bass River	..	..	..	..	2	50	4	600	80	..	...	1000	....	....
Little Bass River	..	..	..	..	1	40	2	350	50	..	...	800	.....	....
Upper Economy	..	..	..	..	5	160	10	1500	200	..	..	3500	.....	....
Central Economy	..	..	..	..	..	..	..	..	..	..	..	..	....	....
Lower Economy	..	..	..	..	..	..	2	..	..	1	200	.....	.....	....
Five Islands	..	..	..	..	5	150	12	.....	.....	2	400	.....	.....	10
Totals	..	..	..	..	61	1312	109	10003	1860	4	1000	18775	6	50
Values $	..	..	..	..	..	..	..	..	..	..	..	3755	72	225

District No. 2.

the Fisheries, Quantity and Value of Fishing Material, Kinds and Quantities of Fish, **Province of Nova Scotia** for the year 1889.

Kinds of Fish.												Fish Products.			Value.
Herrings, smoked, in boxes.	Alewives, barrels.	Cod, cwt.	Hake, cwt.	Haddock, cwt.	Shad, barrels.	Bass, lbs.	Trout, lbs.	Smelt, lbs.	Eels, barrels.	Oysters, barrels.	Lobsters, cans.	Fish, oil, gallons.	Hake Sounds, lbs.	Fish used as bait, barrels.	$ cts.
....	50	230	150	150	.....	280	3000	4000	100	220	90000	210	250	1200	36,445 80
....	30	110	100	60	....	2600	4500	16000	200	30	.....	200	300	300	10,556 00
....	140	500	2500	200	.....	800	200	6000	....	....	74400	1200	2000	500	31,491 00
....	120	300	1700	300	.....	700	350	10000	....	....	42000	900	3200	320	23,280 00
....	340	1140	4450	710	.....	4380	7050	36000	300	250	206400	2510	5750	2320	.....
....	1530	4560	17800	2840	.....	263	705	2160	3000	750	24768	1004	5750	3480	101,772 80
60	.....	.....	.....	....	.....	.....	.....	29000	....	15	.....	....	.....	200	2,372 00
....	5	.....	.....	....	10	600	200	.....	....	....	.....	....	.....	.....	529 00
....	.....	.....	.....	....	11	.....	300	....	....	....	.....	....	.....	.....	329 00
....	.....	.....	.....	....	5	.....	400	.....	....	....	.....	....	.....	.....	185 00
....	.....	.....	.....	....	21	.....	....	.....	....	....	.....	....	.....	.....	654 00
....	.....	.....	.....	....	17	.....	....	.....	....	....	.....	....	.....	.....	453 00
....	.....	.....	.....	....	17	.....	....	.....	....	....	.....	....	.....	.....	463 00
....	.....	.....	.....	....	14	.....	....	.....	....	....	.....	....	.....	.....	466 00
....	.....	.....	.....	....	25	.....	....	.....	....	....	.....	....	.....	.....	725 00
....	.....	.....	.....	....	5	.....	....	.....	....	....	.....	....	.....	.....	145 00
....	.....	.....	.....	....	8	.....	....	.....	....	....	.....	....	.....	.....	72 00
....	.....	.....	.....	....	6	.....	....	.....	....	....	.....	....	.....	.....	254 00
....	.....	.....	.....	....	6	.....	....	.....	....	....	.....	....	.....	.....	214 00
....	.....	.....	.....	....	41	.....	....	.....	....	....	.....	....	.....	.....	1,069 00
....	.....	5	.....	....	....	.....	900	....	....	....	.....	....	.....	.....	110 00
1200	.....	10	.....	....	1	.....	....	....	....	....	.....	....	.....	.....	349 00
....	.....	140	.....	....	14	....	600	.....	....	....	.....	80	.....	.....	823 00
1260	5	155	.....	....	201	600	2400	29000	....	15	.....	80	.....	200	.....
315	23	620	.....	....	1809	36	240	1740	...	45	.....	32	.....	300	9,212 00

RETURN Showing the Number, Tonnage and Value of Vessels and Boats engaged in

DISTRICT.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.							
	Vessels.				Boats.			Nets.		Weirs.					
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	No.	Value.	Salmon, fresh, in ice, lbs.	Mackerel, barrels.	Herrings, barrels.	Alewives, barrels.
			$			$			$		$				
Cumberland Co.															
Pugwash, Port Philip and Gulf Shore	..	....	.....	..	22	525	22	76	92	..	.....	.....	....	....	....
Wallace	..	....	.....	..	60	1200	65	1400	560	..	.....	.....	3	400	280
River Phillip	1	32	1200	4	2	40	6	150	225	..	.....	3500	....	....	500
LaPlanch River	..	....	.....	..	2	36	4	350	240	..	.....	400	....	....	15
Nappan	..	....	.....	..	1	20	2	60	50	..	.....	400	....	....	3
Minudie	..	....	.....	..	3	70	7	520	375	..	.....	300	....	....	4
Apple River	..	....	.....	..	3	80	7	150	125	1	40	1600	....	30	....
Advocate	..	....	.....	..	11	190	22	300	275	..	.....	500	....	50	....
Spencer Island	..	....	.....	..	3	60	6	50	40	3	100	.....	....	80	....
Port Greville	..	....	.....	..	7	180	14	100	80	..	.....	400	....	10	....
Parrsboro'	..	....	.....	..	2	40	4	10	10	..	.....	100	....	5	....
Two Islands	..	....	.....	..	2	40	4	.....	.....	1	50	150	....	5	....
Totals	1	32	1200	4	118	2481	163	3166	2072	5	190	7350	3	580	802
Value $	..	....	.....	..	....	.....	....	.....	.....	..	.....	1470	36	2611	3609

the Fisheries, Quantity and Value of Fishing Material, &c.—**Nova Scotia**—*Con'*

Kinds of Fish.													Fish Products.			Value.
Cod, cwt.	Pollock, cwt.	Hake, cwt.	Haddock, cwt.	Halibut, lbs.	Shad, barrels.	Bass, lbs.	Trout, lbs.	Smelt, lbs.	Eels, barrels.	Oysters, barrels.	Lobsters, cans.	Fish Oil, gallons.	Fish used as bait, barrels.	Fish used as manure, barrels.		
								66582		50	126160		280			$ cts. 19,704 00
10					5	300	800	28600	2	125	156000		575	100		25,023 00
					15		1600	1000	20	28						3,589 00
					20			500								357 00
					12			400								226 00
					60			200								630 00
60	50	20	40	400								10				1,179 00
100	60		70	1000				300			50	20				1,377 00
80	30		35	500												990 00
100	10		30	600												745 00
10	2		15	250												176 00
5			8	200												125 00
365	152	20	198	2950	112	300	2400	97582	22	203	282210	30	855	100		
1460	608	80	792	295	1008	18	240	5855	220	609	33865	12	1283	51		54,121 00

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in

DISTRICT.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.							
	Vessels.				Boats.			Nets.		Weirs, Seines & Traps.		Salmon, barrels.	Salmon, fresh, in ice, lbs.	Salmon, Smoked, lbs.	Salmon, in cans, lbs.
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	No.	Value.				
Guysboro' without the District of St. Mary's.			$			$			$		$				
From and including E. Side Beckerton, Fisherman's Harbor, Country Harbor, Isaac's Harbor Island and Coddle's Harbor to New Harbor	4	188	5700	51	190	5928	228	20860	10430	..	.....	.....	.....	.....	....
From thence to White Head, Torbay Point, Larry River, Charlo's Cove, Cole Harbor, Port Felix and White Head	8	202	6700	49	366	10063	488	65300	32650	..	.....	.....	.....	.....	....
From thence to Canso and Tittle Rasberry, Big and Little Dover, Canso and Tittle	1	49	700	8	182	4700	346	30000	15000	23	3300	.....	4000	.....	....
From thence to Salmon River, Fox Island, Black Point, Half-Island Cove and Philip's Harbor, Crow Harbor, Peas Brook and to Salmon River	..	...	.....	...	227	3372	250	35360	17680	16	1750	.....	1000	.....	....
From thence *viâ* Guysboro', Manchester, North Shore Straits of Canso to County Line	6	274	12250	40	353	8060	446	70400	35200	10	1050	.....	7000	.....	....
Total Boats	..	...	.....	...	1318	32123	1758	221920	110960	49	6100	.....	12000	.....	....
Total Vessels	19	713	25350	148	....	.....	....	.....	.....	..	.....	.....	.....	.....	....
14 Traps	..	...	.....	...	....	.....	....	.....	.....	14	8450	....	.....	.....	....
12 Canneries	..	...	.....	...	....	.....	....	.....	.....	..	.....	.....	.....	.....	1392
Value	..	..	.....	...	....	.....	....	.....	.....	..	.....	.....	.....	.....	....

the Fisheries, Quantity and Value of Fishing Material, &c.—**Nova Scotia**—*Con.*

Kinds of Fish.														Fish Products.			Value.
Mackerel, barrels.	Mackerel, in cans.	Herrings, barrels.	Alewives, barrels.	Cod, cwt.	Pollack, cwt.	Hake, cwt.	Haddock, cwt.	Halibut, lbs.	Trout, lbs.	Squid, barrels,	Smelt, lbs.	Eels, barrels.	Lobsters, cans.	Fish Oil, gallons.	Fish Guano, tons.	Fish used as bait, barrels	
																	$ cts.
262	.....	2610	52	461	..	....	100	3000	1600	.....	4500	10	.....	160	....	58	18,348 00
1178	.....	4595	545	3317	..	....	941	1000	4200	.....	.....	41	....	1643	....	471	56,591 70
380	.. ..	280	5	2200	..	....	420	2000	1000	.....	.....	25	.....	1100	....	368	18,664 50
428	.....	900	81	960	..	....	460	.....	.....	1675	.....	6	.....	322	....	380	22,889 30
1306	.....	3188	1394	1451	..	100	694	.....	2000	.....	1250	20	.....	300	....	153	47,495 50
3554	.....	11573	2077	8389	..	100	2615	6000	8800	1675	5750	102	.....	3525	....	1430	163,989 00
371	.....	1503	19	2877	..	....	.....	.....	.....	80	.....	....	.....	768	....	....	23,436 20
382	.....	202	388	.....	..	....	303	.....	.....	1783	.....	....	.....	50	....	....	15,603 00
.....	26576	.....	.....	.....	..	....	.....	.....	.....	....	.....	...	819809	....	....	....	101,775 00
.....	.....	.....	.....	.....	..	....	.....	.....	.....	.....	.....	....	.....	....	....	....	304,803 20

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in

DISTRICT.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.							
	Vessels.				Boats.			Nets.		Weirs Seines & Traps.		Salmon, barrels.	Salmon, fresh, in ice, lbs.	Salmon, Smoked, lbs.	Salmon, in cans, lbs.
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	No.	Value.				
Guysboro' Co.—Concluded.			$			$			$		$				
St. Mary's Bay and River	..	..	.....	..	45	600	65	6040	380	..	.....	10	11200	640	400
Gegogin Harbor and River	..	..	.....	..	12	190	20	2700	200	..	.....	2	400	480	....
Indian Harbor	2	140	4000	11	30	600	50	9500	900	2	140	800	.....	.....	....
Beckerton	..	..	.....	..	35	650	60	4500	700	..	.....	.....	650	.....	....
Holland's Harbor and Indian River	..	..	.....	..	14	275	24	2500	350	..	.....	.....	1000	400	....
Wine Harbor	1	10	300	3	30	450	50	3000	750	..	.....	.....	1200	200	....
Liscomb and Spanish Bay	..	..	.....	..	95	3000	180	9000	1400	2	240	.....	200	.....	....
Marie Joseph	..	..	.....	..	60	1300	150	5400	1200	..	.....	.....	200	500	....
Ecum Secum	..	..	.....	..	54	1200	140	5500	1300	..	.....	.....	1400	600	....
Head of Country Harbor and River	..	..	.....	..	3	30	3	100	30	..	.....	.....	200	.....	....
Value	..	..	.....	..	.....	.....	.....	.....	.....	..	.....	.....	.....	.....	....
St. Mary's, A. McQuarrie, Overseer	3	150	4300	14	378	8295	742	48240	7210	4	380	812	16450	2820	400
Guysboro', exclusive of St. Mary's	19	713	25350	148	1318	32123	1758	221920	110960	63	14550	.....	12000	....	1392
Total	22	863	29650	162	1696	40418	2500	270160	118170	67	14930	812	28450	2820	1792
Value	..	..	.....	..	.....	.....	..	.....	.....	..	.....	12992	5690	564	268

the Fisheries, Quantity and Value of Fishing Material, &c.—**Nova Scotia**—*Con.*

Kinds of Fish.														Fish Products.			Value.
Mackerel, barrels.	Mackerel, in cans.	Herrings, barrels.	Alewives, barrels.	Cod, cwt.	Pollock, cwt.	Hake, cwt.	Haddock, cwt.	Halibut, lbs.	Trout, lbs.	Squid, barrels.	Smelt, lbs.	Eels, barrels.	Lobsters, cans.	Fish Oil, gallons.	Fish Guano, tons.	Fish used as bait, barrels.	
																	$ cts.
.....	.....	125	60	200	2	2	15	1500	9560	.....	2000	20	41000	110	20	80	11,306 50
.....	.....	40	.....	120	3	4	10	700	2200	.....	1500	15	.....	60	....	40	1,550 00
4	.....	760	.....	150	..	....	16	1000	2450	.....	3000	24	.....	80	10	70	18,084 00
10	.....	650	.....	75	..	....	15	2000	.....	.....	800	10	84000	40	20	100	14,629 00
20	.....	100	.....	20	..	....	5	700	8000	.....	700	10	.. ..	10	....	40	2,146 00
.....	.....	300	....	50	.	....	10	1000	1300	.....	900	15	.....	30	....	120	2,496 00
6	.....	280	250	2400	..	5	10	2000	2500	.....	1400	10	96000	1200	60	1600	28,691 00
10	.....	100	.....	700	..	30	50	3000	.....	.....	1100	20	40800	500	80	1100	13,142 00
20	.....	120	10	300	..	20	100	1300	5000	.....	2000	15	15000	135	10	800	7,109 00
.....	.....	.....	10	.....	..	.. .	.....	.....	1200	.....	200	....	.....	....	....	....	217 00
.....	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	.....	....	....	....	....	....	99,370 50
70	.....	2475	330	4015	5	61	231	13200	32210	.....	13600	139	276800	2165	200	3950	99,370 50
4307	26576	13278	2484	11266	..	100	2918	6000	8800	3538	5750	102	819809	4343	....	1430	304,803 20
4377	26576	15753	2814	15281	5	161	3149	19200	41010	3538	19350	241	1096609	6508	200	5380	....
52524	3189	70889	12663	61124	20	644	12596	1920	4101	14152	1161	2410	131593	2603	5000	8070	404,173 70

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in

DISTRICTS.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.							
	Vessels.				Boats.			Nets.		Seines.					
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	No.	Value.	Salmon, barrels.	Salmon, fresh, in ice, lbs.	Salmon, smoked, lbs.	Mackerel, barrels.
Halifax Co.			$			$			$		$				
North Shore	3	75	1800	18	216	6480	200	45200	4520	48	9600	.....	.....	....	1600
East St. Margaret's	4	80	2600	24	180	5400	190	48000	4800	67	13400	.....	2000	....	800
Indian Harbor	7	140	3700	48	130	3900	115	20000	2000	38	7600	.....	2000	....	620
Peggy's Cove	....	....	....	....	96	2880	100	70000	7000	62	12400	.....	2000	....	275
Dover	8	160	5600	48	106	3180	130	60000	7200	48	9600	.....	1400	....	1600
Prospect	5	120	3360	30	425	12750	370	255000	38250	100	20000	.....	2000	....	1700
Terrence Bay	7	140	5000	48	125	2500	115	45000	6750	32	6400	.....	....	....	270
Pennant	6	70	2800	30	80	3200	100	18000	2700	10	2000	.....	.....	....	100
Sambro	6	90	2800	24	140	5600	150	18000	2700	2	400	.....	.....	....	150
Keitch Harbor	2	40	1000	10	95	2850	90	21000	2310	9	1800	.....	.....	....	300
Portuguese Cove	....	....	....	....	70	1750	96	110000	17600	23	4600	.....	7900	....	1560
Herring Cove	13	310	10000	84	110	3200	115	42000	5040	41	8200	.....	.....	....	1900
Ferguson's Cove	1	25	750	6	25	500	30	12000	1440	30	6000	.....	.....	....	300
Bedford	....	....	....	....	12	250	20	4500	540	3	600	.....	200	....	15
Halifax	2	140	4000	24	...	.....	...	..	.....	....	.....	1200	.....	....	220
Ecum Secum to Quoddy	....	....	.....	....	119	2417	122	5661	334	2	370	.....	.....	835	17
Sober Island and Beaver Harbor to Spry Bay	10	296	7000	56	139	2777	149	33805	2349	1	25	.....	270	1106	184
Gerrard's Island to Ship Harbor	3	95	1750	18	125	2259	130	31570	2099	....	.....	.....	160	....	66
Clam Harbor to Petpeswick Hbr.	13	320	7050	88	236	4646	223	34370	2176	3	1350	.....	900	1490	255
East Chezzetcook to Seaforth	12	455	15900	137	212	2832	130	98270	3327	....	.....	.....	.....	...	325
Three Fathom Harbor to Eastern Passage	2	35	650	10	58	1000	71	12890	719	....	.....	.....	954	200	313
Fish used for Home Consumption	....	....	.....	....	....	.....	....	....	.....	....	.....	.....	800	....	450
Totals	104	2591	75760	703	2699	70371	2646	985266	113854	519	104345	1200	20589	3631	13020
Value ..... $	....	...	.....	....	....	.....	....	....	....	....	.....	19200	4116	726	156240

the Fisheries, Quantity and Value of Fishing Material, &c.—**Nova Scotia**—*Con.*

Kinds of Fish.													Fish Products			Value.
Mackerel, in cans.	Herring, barrels.	Alewives, barrels.	Cod, cwt.	Cod Tongues and Sounds, barrels.	Pollock, cwt.	Hake, cwt.	Haddock, cwt.	Halibut, lbs.	Trout, lbs.	Smelt, lbs.	Eels, barrels.	Lobsters, cans.	Fish Oil, gallons.	Hake Sounds, lbs.	Fish used as bait, barrels.	
																$ cts.
.....	50	50	120	3	..	560	....	.....	....	.....	....	.....	420	560	70	23,233 00
.....	500	....	500	10	..	1000	....	.....	....	.....	20	.....	900	1000	200	20,210 00
.....	600	....	520	11	..	1600	....	... .	....	.....	....	50000	1260	1600	250	27,609 00
.. ..	60	....	80	2	..	.....	....	.....	....	.....	....	.....	60	....	20	4,364 00
.....	410	175	440	9	..	1800	....	... ..	....	.....	....	.....	270	1800	320	33,550 00
11962	250	20	1000	20	..	40	....	.....	....	.....	....	29168	600	40	280	32,011 00
.....	76	....	250	5	..	250	....	.....	....	.....	....	....	300	250	50	6,077 00
.....	50	100	1260	24	..	.....	....	.....	....	.....	....	.....	720	....	240	7,563 00
.....	500	....	2000	40	..	200	....	.....	....	..	....	120000	1320	200	275	28,791 00
.....	100	75	900	18	..	.....	....	.....	....	.....	....	.....	540	....	90	8,518 00
. ...	750	20	110	....	..	.....	50	....	....	.....	....	.....	70	....	20	24,463 00
.....	100	....	1200	24	..	.....	....	80000	....	.....	....	.....	720	....	140	36,788 00
.....	10	....	150	3	..	.....	....	8000	....	.....	....	13776	90	....	40	6,824 00
.....	20	....	25	1	..	.....	....	.....	....	.... .	....	....	30	....	5	439 00
.....	12000	....	..	....	..	.....	....	.....	....	.....	....	.....	48000	....	....	95,041 00
.....	67	10	701	....	..	.....	29	130	858	1553	13	411536	355	....	26	53,525 00
.....	525	36	1841	4	..	175	48	1470	670	1200	30	180144	666	220	71	36,100 00
.....	76	827	1622	2	..	23	93	668	520	1250	17	98880	620	16	51	24,429 00
.....	1098	29	5312	6	18	161	203	2038	2090	12100	75	184450	2201	208	209	56,870 00
.....	799	79	6310	4	4	24	142	930	550	4200	11	.....	2846	58	262	35,910 00
.....	379	232	1190	....	..	39	58	3600	850	28300	15	.....	432	46	34	14,447 00
. ....	1800	....	1750	....	..	.....	750	.....	....	.....	....	.....	.....	....	....	23,660 00
Fresh fish sold in Halifax markets.....																40,500 00
11962	20220	1653	27221	186	22	5872	1373	96836	5538	48603	181	1087954	62420	5998	2653	....
1435	90990	7439	108884	1860	88	23488	5492	9684	554	2916	1810	130555	24968	5998	3979	640,922 00

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in

DISTRICTS.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.					
	Vessels.				Boats.			Nets.		Weirs.			
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	No.	Value.	Salmon, fresh, in ice, lbs.	Mackerel, barrels.
Hants Co.			$			$			$		$		
Shubenacadie River to Maitland					17	232	20	1128	450			2000	
Grand Lake to Shubenacadie					82	246	82	738	328			3236	
West Hants					10	1000	20	2435	1500	4	150	322	
Totals					109	1478	122	4301	2278	4	150	5558	
Value $												1112	
Pictou Co.													
Pictou Island	1	32	1000	4	6	30	12	600	2000				15
Chance Harbor					10	120	10	1170	1580			30300	50
Little Harbor					15	180	15	1105	1490			2000	100
Big Island					10	120	10	800	1150			45300	100
North Beach					12	144	12	1000	1350			29200	180
Ponds					5	60	5	600	918			12500	11
Lismore					5	60	5	800	680			4800	20
Middle District													
West Pictou	2	60	2000	6	85	800	180	4500	2450			5000	50
Totals	3	92	3000	10	148	1514	249	10575	11618			129100	526
Value $												25800	6312

the Fisheries, Quantity and Value of Fishing Material, &c.—**Nova Scotia**—*Con.*

Kinds of Fish.												Fish Products.				Value.
Herrings, barrels.	Herrings, smoked, in boxes.	Alewives, barrels.	Cod, cwt.	Hake, cwt.	Haddock, cwt.	Shad, barrels.	Bass, lbs.	Trout, lbs.	Smelt, lbs.	Eels, barrels.	Oysters, barrels.	Lobsters, cans.	Fish Oil, gallons.	Hake Sounds, lbs.	Fish used as bait, barrels.	Fish used as manure, barrels.	
																	$
.....	....	40	....	.....	..	9	....	....	.....	.....	...	.....	....	....	....	.....	661
...	....	1566	...	.....	..	136	19690	....	.....	10	...	.....	....	....	....	.....	10,199
85	325	....	50	.....	24	77	.....	....	.....	.....	...	.....	....	....	....	....	1,518
85	325	1606	50	.....	24	222	19690	....	.....	10	...	. .	....	....	....	.....	.....
383	81	7227	200	.....	96	1998	1181	....	.....	100	...	.....	....	....	....	.....	12,378
133	....	....	....	6	..	.....	.....	...	.....	.....	...	219000	....	....	....	.....	27,083
100	....	....	...	50	..	.....	.....	....	.....	.....	...	.....	....	....	....	.....	7,310
50	....	....	....	100	..	.....	.....	....	.....	.....	...	.....	....	....	....	.....	2,225
50	....	....	....	50	..	.....	.....	....	.....	.....	...	30000	....	....	....	.....	14,285
220	....	....	....	1250	..	.....	.....	....	.....	.....	...	.....	....	....	....	.....	13,990
23	....	....	....	106	..	.....	.....	....	.....	.....	...	....	....	....	....	....	3,159
25	...	....	....	2500	..	.....	.....	....	.....	.....	...	.....	....	....	3	13	11,324
.....	....	100	....	.....	..	.....	.....	....	5000	25	...	.....	....	....	....	.....	1,000
300	....	....	200	80	..	.....	.....	150	6000	300	25	457000	100	200	400	4000	65,260
901	....	100	200	4142	..	.....	.....	150	11000	325	25	706000	100	200	403	4013	.....
4055	....	450	800	16568	..	.....	.....	15	660	3250	75	84720	40	200	605	2006	145,576

RECAPITULATION of the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries, Quantity and Value of Fishing Material, Kinds and Quantities of Fish, and the Total Number of Men Employed, &c., in District No. 2, **Province of Nova Scotia**, for the Year 1889.

COUNTIES.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.				KINDS OF FISH.								
	Vessels.				Boats.			Nets.		Weirs.										
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	No.	Value.	Salmon, barrels.	Salmon, fresh, in ice, lbs.	Salmon, Smoked, lbs.	Salmon, in cans, lbs.	Mackerel, barrels.	Mackerel, in cans.	Herrings, barrels.	Herrings, smoked, in boxes.	Alewives, barrels.
District No. 2.			$			$			$		$									
Antigonish	.....	.....	.....	.....	254	6600	539	127000	53000	.....	.....	.....	47000	.....	.....	1819	.....	430	.....	340
Colchester	.....	.....	.....	.....	61	1312	109	10003	1860	4	1000	.....	18775	.....	.....	6	.....	50	1260	5
Cumberland	1	32	1200	4	118	2481	163	3166	2072	5	190	.....	7350	.....	.....	3	.....	580	.....	802
Guysboro'	22	863	29650	162	1696	40418	2500	270160	118170	67	14930	812	28450	2820	1792	4377	26576	15753	.....	2814
Halifax	104	2591	75760	703	2699	70371	2646	985266	113854	519	10435	1200	20584	3631	.....	13020	11962	20220	.....	1653
Hants	.....	.....	.....	.....	109	1478	122	4301	2178	4	150	.....	5558	.....	.....	.....	.....	85	325	1606
Pictou	3	92	3000	10	148	1514	249	10575	11618	.....	.....	.....	129100	.....	.....	526	.....	901	.....	100
Totals	130	3578	109610	879	6085	124174	6328	1410471	302752	599	26705	2012	256817	6451	1792	19751	38538	38019	1585	7320

RECAPITULATION of the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries, &c.—**Nova Scotia**—*Concluded.*

COUNTIES.	KINDS OF FISH.														FISH PRODUCTS.					VALUE.
	Cod, cwt.	Cod Tongues and Sounds, barrels.	Pollock, cwt.	Hake Sounds, lbs.	Haddock, cwt.	Halibut, lbs.	Shad, barrels.	Bass, lbs.	Trout, lbs.	Squid, barrels.	Smelt, lbs.	Eels, barrels.	Oysters, barrels.	Lobsters, cans.	Fish Oil, gallons.	Fish Roes, barrels.	Fish Guano, tons.	Fish used as bait, barrels.	Fish used as manure, barrels.	
District No. 2.																				$
Antigonish	1140	....	.....	4450	710	....	....	4380	7050	.....	36000	300	250	206400	2510	5750	.....	2320	.....	101,773
Colchester	155	....	.....	.....	.....	.....	201	600	2400	.....	29000	....	15	....	80	.....	.....	200	.....	9,212
Cumberland	365	.....	152	20	198	2950	112	300	2400	.....	97582	22	203	282210	30	.....	.....	855	100	54,121
Guysboro'	15281	.....	5	161	3149	19200	....	.....	41010	3538	19350	241	....	1096609	6508	.....	200	5380	.....	404,173
Halifax	27221	186	22	5872	1373	96836	....	.....	5538	.....	48603	181	....	1087954	62420	5998	.....	2653	.....	640,922
Hants	50	.....	.....	....	24	.. ..	222	19690	.....	....	.....	10	....	.....	.....	.....	.....	.....	.....	12,378
Pictou	200	.....	.....	4142	....	.....	....	....	150	.....	11000	325	25	706000	100	200	.....	403	4013	145,576
Totals	44412	186	179	14645	5454	118986	535	24970	58548	3538	241535	1079	493	3379173	71648	11948	200	11811	4113	1,368,155

RECAPITULATION

Of the Yield of Fisheries in District No. 2, **Nova Scotia.**

Kinds of Products.	Quantities.	Rate.	Value.	Total.
		$ cts.	$	$
Salmon, pickled ... Brls.	2,012	16 00	32,192	
do fresh, in ice ... Lbs.	256,817	0 20	51,363	
do smoked ... "	6,451	0 20	1,290	
do cans ... "	1,792	0 15	268	
				85,113
Mackerel, pickled ... Brls.	19,751	12 00	237,012	
do preserved, in cans ... Cans.	38,538	0 12	4,624	
				241,636
Herrings, pickled ... Brls.	38,019	4 50	171,088	
do smoked ... Boxes	1,585	0 25	396	
				171,484
Alewives, pickled ... Brls.	7,320	4 50	.....	32,941
Cod, dried ... Cwt.	44,412	4 00	177,648	
Cod Tongues and Sounds ... Brls.	186	10 00	1,860	
				179,508
Pollock, dried ... Cwt.	179	4 00	716	
Hake, dried ... "	14,645	4 00	58,580	
Hake Sounds ... Lbs.	11,948	1 00	11,948	
				71,244
Haddock, dried ... Cwt.	5,454	4 00	.....	21,816
Halibut ... Lbs.	118,986	0 10	.....	11,899
Shad ... Brls.	535	9 00	.....	4,815
Bass ... Lbs.	249,701	0 06	.....	1,498
Trout ... "	58,548	0 10	.....	5,855
Squid ... Brls.	3,538	4 00	.....	14,152
Smelts ... Lbs.	241,535	0 06	.....	14,492
Eels ... Brls.	1,079	10 00	.....	10,790
Oysters ... "	493	3 00	.....	1,479
Lobsters ... Cans.	3,379,173	0 12	.....	405,501
Fish Oil ... Galls.	71,648	0 40	.....	28,659
do Guano ... Tons.	200	25 00	.....	5,000
do used as bait ... Brls.	11,811	1 50	.....	17,717
do do manure ... "	4,113	0 50	.....	2,056
Total ...	.....	.....	.....	1,327,655
Amount sold in Halifax fish market ...	.....	.....	.....	40,500
		.....	.....	1,368,155

COMPARATIVE STATEMENT of Increase and Decrease of the several Products of the Fisheries, District No. 2, Province of **Nova Scotia**, for the Years 1888 and 1889.

Kinds of Products.		Increase.	Decrease.
Salmon, pickled	Brls.		606
do fresh, in ice	Lbs.	1,406	
do smoked	"		715
do preserved	"		2,330
Mackerel, pickled	Brls.	5,353	
do preserved	Cans.	24,250	
Herring, pickled	Brls.		8,818
do smoked	Boxes	10	
Alewives, pickled	Brls.	4,164	
Cod, dried	Cwt.		39,370
Cod Tongues and Sounds	Brls.		355
Pollock and Hake	Cwt.		1,263
Hake Sounds	Lbs.		6,877
Haddock, dried	Cwt.		7,434
Halibut	Lbs.		122,051
Shad	Brls.	86	
Bass	Lbs.	3,130	
Trout	"		4,392
Squid	Brls.	1,912	
Smelts	Lbs.		70,238
Eels	Brls.		941
Oysters	"	146	
Lobsters	Cans.	488,838	
Fish Oil	Galls.		9,216
Guano	Tons.	200	
Fish used as bait	Brls.		11,099
do manure	"	513	

COMPARATIVE STATEMENT of Value of Fisheries in each County of District No. 2, **Nova Scotia**, for the Years 1888 and 1889.

Counties.	1888.	1889.	Increase.	Decrease.
	$	$	$	$
Antigonish	93,988	101,773	7,785	
Colchester	6,796	9,212	2,416	
Cumberland	56,245	54,121		2,124
Guysborough	421,445	404,173		17,272
Halifax	808,607	640,922		167,685
Hants	15,005	12,378		2,627
Pictou	114,089	145,576	31,487	
Total	1,516,175	1,368,155	41,688	189,708
Decrease				*148,020

*Or $9\frac{3}{4}$ per cent. nearly.

NOVA SCOTIA—

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in and the Total Number of Men Employed, &c., in the

DISTRICT.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.						
	Vessels.				Boats.			Nets.		Weirs.				
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	No.	Value.	Salmon, fresh, in ice, lbs.	Herrings, barrels.	Herrings, smoked in boxes.
Annapolis Co.			$			$			$		$			
Margaretvale	2	27	700	8	9	270	18	1800	900	....	.....	....	910	520
Port George	....	....	....	....	12	200	24	1200	600	2	300	1000	200	.....
Hampton and Young's Cove	....	....	....	....	30	500	60	4000	2000	....	.....	....	700	.....
Annapolis River, East of Round Hill	....	....	....	....	8	40	16	80	160	....	.....	700	....	.....
Granville Ferry to Thorne's Cove	....	....	....	....	15	300	30	700	350	7	1400	....	20	3550
Thorne's Cove to Digby Gut	3	127	3810	29	45	900	75	2700	1350	3	300	....	490	2500
Litchfield to Hillsburn	1	15	450	7	19	380	46	1140	570	....	.....	....	320	.....
Parker's Cove and Young's Cove	....	....	....	....	40	700	61	2800	1400	....	.....	....	1187	.....
South side Annapolis Basin	3	42	1260	13	23	540	47	400	250	10	2000	....	270	12000
Lequille	....	....	....	....	....	....	7	40	20	1	40	540	....	.....
Annapolis and Round Hill Rivers	....	....	....	....	....	....	20	30	15	2	200	3000	....	.....
Indian Lake and River	....	....	....	....	....	....	....	.....	....	....	.....	....	....	.....
Total	9	211	6220	57	201	3830	404	14890	7615	25	4240	5240	4097	18570

District No. 3.

the Fisheries, Quantity and Value of Fishing Material, Kinds and Quantities of Fish, Province of **Nova Scotia**, for the Year 1889.

Kinds of Fish.											Fish Products.					Value.
Alewives, barrels.	Cod, cwt.	Cod Tongues and Sounds, brls.	Pollock, cwt.	Hake, cwt.	Haddock, cwt.	Halibut, lbs.	Shad, barrels.	Bass, lbs.	Trout, lbs.	Eels, barrels.	Fish Oil, gallons.	Hake Sounds, lbs.	Fish Guano, tons.	Fish used as bait, barrels.	Fish used as Manure, barrels.	
																$ cts.
....	60	....	35	.....	25	2500	....	.....	.....	....	90	.....	....	250	20	4,921 00
....	200	....	100	.....	100	1000	....	.....	.....	....	300	.....	....	200	20	3,130 00
....	200	....	100	.....	200	4000	....	.....	.....	....	.....	.....	....	100	30	5,365 00
....	.....	....	.....	.....	.....	.....	....	900	.....	....	.....	.....	.....	.....	....	194 00
....	20	....	10	.....	25	.....	....	.....	.....	....	.....	.....	20	20	....	1,717 50
....	1930	14	340	1800	2000	15094	....	.....	.....	....	2300	2000	100	1200	...	35,734 40
....	600	6	182	505	620	2050	....	.....	.....	....	454	500	75	360	....	12,269 60
....	209	3	130	68	70	474	....	.....	.....	....	287	70	42	312	....	8,436 20
....	458	6	15	320	335	5630	....	.....	.....	....	640	.....	100	700	....	13,021 00
20	.....	....	.....	.....	.....	.....	....	200	450	5	.....	.....	...	.....	....	305 00
...	.....	....	...	.....	.....	.....	5	740	250	4	.....	....	14	.....	...	1,109 40
....	.....	....	....	.....	.....	.....	....	.....	4000	....	.....	.....	....	.....	....	400 00
20	3677	29	912	2693	3375	30748	5	1840	4700	9	4071	2570	351	3142	70	86,603 10

Live Lobsters shipped to United States, 261 tons, at $35....$ 9,135 00

95,738 10

RETURN showing the Number, Tonnage and Value of Vessels and Boats Engaged in

DISTRICT.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.						
	Vessels.				Boats.			Nets.		Weirs.				
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	No.	Value.	Salmon, fresh, in ice, lbs.	Herrings, barrels.	Herrings, smoked in boxes.
Digby Co.			$			$			$		$			
Digby	8	334	6200	77	8	400	16	1600	1000	14	1800	....	....	1480
Broad Cove	..	....	.....	....	7	350	14	600	300	....	....	....	....	....
Gulliver's Cove	..	....	.....	....	6	300	12	550	275	....	....	100	....	....
Shelving Cove	..	....	.....	....	6	320	13	600	300	....	....	....	....	....
Centreville	..	....	.....	....	15	750	30	1300	760	....	....	....	....	....
Sandy Cove	..	....	.....	....	20	850	40	1850	1000	2	100	....	...	....
Little River	..	....	.....	....	40	1560	80	2600	1600	....	....	....	....	....
Weymouth	..	....	.....	....	14	620	28	1100	700	2	100	....	....	....
Church Point	..	....	.. ...	....	15	620	30	1200	700	....	....	....	....	....
Meteghan	..	....	.....	....	7	350	14	600	300	....	....	....	....	....
Salmon River and Cape St. Mary	..	....	.....	....	41	1590	82	2650	1620	....	....	....	....	....
Head St. Mary's Bay	..	....	.....	....	....	.....	....	.....	.....	4	650	....	....	....
Westport	23	460	19000	160	38	1200	120	14000	7000	....	....	....	650	....
Freeport	14	290	11000	110	80	2700	240	12000	6000	....	....	....	720	....
Tiverton	5	100	3000	32	40	1300	120	7000	3500	....	....	....	150	....
Total	50	1184	39200	379	337	12910	839	47650	25055	22	2650	100	1520	1480

the Fisheries, Quantity and Value of Fishing Materials, &c.—**Nova Scotia**—*Con.*

Kinds of Fish.											Fish Products.				Value.
Cod, cwt.	Cod Tongues and Sounds, brls.	Pollock, cwt.	Hake, cwt.	Haddock, cwt.	Halibut, lbs.	Shad, barrels.	Trout, lbs.	Smelt, lbs.	Eels, barrels.	Lobsters, cans.	Fish Oil, gallons.	Hake Sounds, lbs.	Fish used as bait, barrels.	Fish used as Manure, barrels.	$ cts.
3000	....	600	2000	5000	41000	....	500	1000	4	22896	6200	1000	1500	1540	56,267 52
351	....	90	700	800	1000	....	....	....	....	.....	600	400	450	540	9,445 00
340	....	80	500	650	2000	....	....	....	....	.....	450	360	340	300	7,700 00
360	....	140	700	560	1700	....	....	....	....	....	550	280	340	100	8,270 00
1400	....	460	2866	1500	2960	....	....	....	....	.....	2000	800	680	400	28,020 00
2000	....	560	2820	2000	3500	....	....	....	....	.....	2200	850	775	600	33,062 50
3000	....	565	2900	2500	4000	....	....	....	....	.....	2500	920	900	680	39,870 00
310	....	545	775	650	640	....	....	....	....	.....	1050	360	750	710	11,444 00
360	....	493	754	660	700	....	....	....	....	.....	100	310	860	730	11,143 00
389	....	300	360	410	2000	....	....	....	6	.....	750	200	500	540	7,616 00
4500	...	3000	1750	1000	13500	....	....	....	11	.....	3200	340	1200	500	46,130 00
.....	.....	.....	.....	.....	.....	3	....	....	3	.....	100	.....	50	150	250 00
30500	40	18400	21200	25700	80000	.. .	....	...	....	.....	43600	10160	4800	500	429,250 00
20000	28	11600	16800	14250	45000	....	....	....	....	.....	26500	7600	3000	600	281,260 00
3500	12	2850	3000	2500	12000	....	....	....	....	.....	5000	1200	1000	200	54,120 00
70009	80	39683	57125	58180	210000	3	500	1000	24	22896	94800	24780	17145	8090	1,023,848 02

Live Lobsters shipped to United States, 741 tons, at $35....	$ 25,935 00
Fresh Haddock sold abroad, 750,000 lbs., at 4c.....	30,000 00
Finnan Haddies exported, 140,000 lbs., at 8c.....	11,200 00
	67,135 00
	1,090,983 02

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in

DISTRICT.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.						
	Vessels.				Boats.			Nets.		Weirs.				
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	No.	Value.	Salmon, fresh, in ice, lbs.	Mackerel, barrels.	Herring, barrels.
King's.			$			$			$		$			
Gaspereaux												500		
Aylesford												2100		
Kentville														
Avonport					12	200	12	2000	1000	1	500			
Boat Island								2200	1100	1	400			
Blomidon	2	27	400	5				400	200	2	200			10
Baxter's Harbor	1	10	250	3	13	200	26	600	300	1	200	1500		525
Black Rock					10	150	20	500	250	4	800	1200		700
Canada Creek					6	120	12	250	125			400		125
Hall's Harbor	3	45	800	8	20	400	40	1250	625	7	1500	9000	6	500
Harborville	1	15	200	3	2	40	4	500	250	6	1200	1400		1070
Kingsport	1	11	150	3				400	200					100
Long Island								3000	1500	2	500			
Morden								1200	600	4	800	2500		550
Medford								200	100	2	300			
Pereaux								200	100	2	300			15
Starr's Flats								3000	1500	2	800			
Scott's Bay								4000	2000	3	1500			
Totals	8	108	1800	22	63	1110	114	19700	9850	37	9000	18600	6	3595

the Fisheries, Quantity and Value of Fishing Material, &c.—**Nova Scotia**—*Con.*

Kinds of Fish.										Fish Products.			Value.
Herring, smoked, in boxes.	Alewives, barrels.	Cod, cwt.	Pollock, cwt.	Haddock, cwt.	Halibut, lbs.	Shad, barrels.	Trout, lbs.	Smelt, lbs.	Eels, barrels.	Fish Oil, gallons.	Fish used as bait, barrels.	Fish used as manure, barrels.	$ cts.
.....	650	.....	.....	.....	.....	.....	1000	7000	10	.....	.....	.....	3,745 00
.....	.....	.....	.....	.....	.....	.....	750	.....	.....	.....	.....	.....	495 00
.....	.....	.....	.....	.....	.....	.....	.....	2000	.....	.....	.....	.....	120 00
.....	600	.....	.....	.....	.....	12	.....	.....	.....	.....	.....	.....	2,820 00
.....	.....	.....	.....	.....	.....	20	.....	.....	.....	.....	.....	.....	200 00
80	.....	4	.....	2	.....	2	.....	.....	.....	.....	.....	10	97 00
.....	.....	168	98	168	.....	.....	.....	.....	.....	.....	70	50	4,266 00
10500	.....	200	150	130	.....	.....	.....	.....	.....	300	300	350	8,330 00
400	.....	60	60	200	.....	.....	.....	.....	.....	150	80	150	2,404 00
1000	.....	300	150	250	1500	.....	.....	.....	.....	100	200	400	7,630 00
1050	.....	50	40	30	.....	.....	.....	.....	.....	.....	50	350	5,474 50
500	.....	40	25	.....	.....	.....	.....	.....	.....	.....	10	.....	800 00
.....	.....	.....	.....	.....	.....	35	.....	.....	.....	.....	.....	.....	350 00
.....	.....	50	40	.....	.....	.....	.....	.....	.....	.....	12	100	3,128 00
50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50	37 50
100	.....	15	4	.....	.....	.....	.....	.....	.....	.....	.....	40	181 00
.....	.....	.....	.....	.....	.....	75	.....	.....	.....	.....	.....	.....	750 00
.....	.....	.....	.....	.....	.....	274	.....	.....	.....	.....	15	200	2,662 50
13680	1250	887	567	780	1500	418	1750	9000	10	550	737	1700	43,490 50

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in

DISTRICT.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.								
	Vessels.				Boats.			Nets.		Weirs.						
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	No.	Value.	Salmon, fresh, in ice, lbs.	Salmon, smoked, lbs.	Mackerel, barrels.	Herrings, barrels.	Alewives, barrels.
Lunenburg Co.			$			$			$		$					
Chester	4	234	5000	44	59	1365	58	14350	2945	4	2000	6220	450	400	90	225
Martin's River	3	257	11500	48	57	1325	47	12400	1365	1	400	1100	100	100	55	55
Fox Point	2	63	3000	17	83	2240	124	62400	7505	..	....	800	....	800	697	25
Mill Cove	1	21	400	5	67	1235	75	51400	5820	..	....	800	....	500	325	20
Lodge	....	.....	.....	...	20	385	27	23000	1825	..	....	400	....	250	90	15
N. W. Cove	...	.....	.....	....	45	1580	54	38800	3450	..	...	1000	....	675	240	12
Aspotogen	2	25	600	6	27	655	32	15000	1750	..	.....	500	60	250	190	15
Sandy Beach	....	.....	.....	....	40	1195	48	36000	3400	..	....	450	....	190	250	10
Blandford	1	56	1000	5	70	2015	70	57000	5720	..	....	775	....	900	360	25
Little Tancook	....	.....	.....	....	48	1750	49	47000	4700	..	....	150	....	200	450	10
Big Tancook	....	.....	.....	....	136	8760	176	136000	15500	..	....	1100	....	720	1950	45
Deep Cove	....	.....	.....	....	22	680	32	22500	2225	1	600	350	....	155	95	40
Lunenburg to Cross Island	85	7650	400500	1200	150	5300	200	18000	11063	..	....	.....	....	400	1000	20
Mahone Bay and Indian Point Islands	19	1487	91500	240	5	218	10	1500	480	..	....	.....	....	4	100	30
E. S. La Have River to New Dublin	57	42135	229500	818	425	9000	325	40625	17875	..	....	50	30	776	3995	65
Petite Rivière to E. Port Medway	8	640	43200	112	200	4280	180	23500	8090	..	. .	35	25	600	2500	50
Totals	182	14668	786200	2495	1454	41983	1507	599475	93713	6	3000	13730	665	6920	12387	6625

the Fisheries, Quantity and Value of Fishing Material, &c.—Nova Scotia—*Con.*

Kinds of Fish.												Fish Products.					Value.
Cod, cwt.	Cod Tongues and Sounds, brls.	Pollock, cwt.	Hake, cwt.	Haddock, cwt.	Halibut, lbs.	Shad, barrels.	Trout, lbs.	Squid, barrels.	Smelt, lbs.	Eels, barrels.	Lobsters, cans.	Fish Oil, gallons.	Hake Sounds, lbs.	Fish Guano, tons.	Fish used as bait, barrels.	Fish used as manure, barrels.	$ cts.
650	10	225	.....	.....	100	..	550	7	950	30	95000	250	....	..	55	30	24,355 00
2614	15	....	.....	.....	1200	..	315	2	800	18	.....	1500	....	..	145	....	14,018 50
725	2	15	1000	.....	500	..	165	7	250	4	.....	550	1000	..	105	30	23,582 50
185	1	15	200	.....	.....	..	.....	2	225	6	.....	145	75	..	15	10	10,902 00
95	....	50	50	.....	.....	..	.....	2	.....	....	.....	50	40	..	5	5	5,115 50
250	3	40	25	150	.....	..	25	2	150	4	.....	125	10	..	35	15	13,408 50
150	2	10	10	.....	135	..	60	2	.....	2	50000	75	5	..	10	6	11,490 00
155	1	15	50	.....	110	..	.....	1	.....	2	.....	95	35	..	20	10	5,018 00
475	5	25	25	.....	.....	..	.....	12	.....	10	.....	415	10	..	15	20	17,714 00
355	....	25	10	.....	485	..	.....	2	.....	2	.....	235	5	..	40	20	6,680 50
1250	15	50	50	.....	550	..	.....	12	.....	5	45000	875	45	..	105	110	30,733 00
55	....	15	.....	.....	.....	..	75	2	250	12	.....	160	....	..	5	10	3,462 00
92500	300	2500	1200	7500	130600	..	....	20	.....	6	68750	31000	....	10	106	....	462,149 00
17480	76	525	260	1275	29560	..	....	....	.....	.....	.....	7800	....	2	6	....	85,650 00
42272	120	135	420	1135	260000	10	200	200	5500	50	14988	32000	....	12	1000	....	249,125 06
7350	20	50	75	225	43350	4	....	80	2700	10	12500	5050	....	2	550	....	59,589 00
166561	570	3695	3375	10285	466590	14	1390	353	10825	161	286238	80325	1225	26	2217	266	1,022,992 56

Clams, 5,000 cans, at 12c	$600 00	
Scallops, 800 doz., at 50c	400 00	
		1,000 00
		1,023,992 5 (

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in

DISTRICT.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.					
	Vessels.				Boats.			Nets.					
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	Salmon, fresh, in ice, lbs.	Salmon, smoked, lbs.	Mackerel, barrels,	Herrings, barrels.
Queen's Co.			$			$			$				
Liverpool	3	276	13000	56	20	300	25	1080	540	4500	....	10	940
Port Mouton	3	145	4000	24	78	3600	161	3600	1600	200	....	15	2500
Brooklyn	2	142	9500	25	17	892	34	1140	400	2000	....	....	120
Port Joli	....	....	....	....	29	550	37	60	30	.....	....	....	.....
Port L'Hébert	1	15	100	5	12	240	12	150	60	.....	....	....	.....
Somerville	....	.....	.....	....	7	70	8	120	500	.....	....	....	40
Hunt's Point	....	....	.....	....	25	500	39	1000	975	.....	....	15	160
White Point	....	.....	.....	....	7	175	14	1300	104	.....	....	100	250
Beach Meadows	....	.....	.....	....	10	140	10	260	400	250	....	....	63
Coffin Island	....	.....	.....	....	11	270	23	1000	120	30	....	.. .	137
Eagle Head	....	.....	.....	....	8	324	14	340	378	300	....	....	30
West Berlin	....	.....	.....	....	18	220	17	1275	360	160	....	....	140
East Berlin	....	.....	.....	....	17	204	15	900	981	840	....	....	30
West Head	....	.....	.....	....	36	540	39	2180	250	.....	....	41	986
Moose Harbor	....	.....	.....	....	9	108	11	500	160	.....	....	5	310
Black Point	....	.....	.....	....	6	90	8	700	210	.....	....	....	105
Milton	....	.....	.....	....	6	72	10	160	80	3750	....	....	.....
Gull Island	....	.....	.....	....	5	100	8	360	180	10	....	10	180
East Head	....	.....	.....	....	10	150	8	380	175	360	....	1	85
Mill Village	....	.....	.....	....	55	410	51	1900	680	3575	200	....	.....
Port Medway	10	845	35100	149	85	1600	90	8790	1875	7225	150	112	693
Ponhook	....	.....	.....	....	8	96	32	180	120	1700	50	....	.....
Total	19	1423	61700	259	479	10651	666	27575	10178	24900	400	309	6819

the Fisheries, Quantity and Value of Fishing Material, &c.—**Nova Scotia**—*Con.*

Kinds of Fish.													Fish Products.			Value
Alewives, barrels.	Cod, cwt.	Cod Tongues and Sounds, brls.	Pollock, cwt.	Hake, cwt.	Haddock, cwt.	Halibut, lbs.	Shad, barrels.	Trout, lbs.	Squid, barrels.	Smelt, lbs.	Eels, barrels.	Lobsters, cans.	Fish Oil, gallons.	Fish used as bait, barrels.	Fish used as Manure, barrels.	
																$ cts.
15	3410	20	....	....	12	1000	....	2000	....	.....	10	....	1100	25	60	19,673 00
10	2600	2	....	70	50	2000	....	500	....	.....	50	56200	2000	300	200	30,139 00
30	1667	6	....	....	50	1500	....	100	....	200	3	.....	800	150	240	8,770 00
24	140	....	....	....	5	....	....	200	....	2000	40	...	110	540	....	2,082 00
.....	100	....	....	....	....	.....	....	250	....	.....	60	288	80	200	....	1,391 56
.....	70	....	....	....	12	.....	....	100	....	.....	....	.....	86	140	40	762 40
.....	450	....	....	....	50	.....	....	....	....	.....	5	.....	400	150	100	3,350 00
.....	200	....	....	....	50	.....	....	200	....	.....	....	.....	180	100	150	3,817 00
.....	40	....	....	....	4	100	....	.....	....	.....	....	.....	30	5	22	518 50
.....	331	4	....	....	30	200	....	.....	....	.....	....	20400	150	25	120	4,663 50
.....	210	....	....	....	20	.....	....	.....	....	.....	....	.....	100	20	15	1,177 50
5	60	....	....	....	10	400	....	.....	....	.....	....	.....	30	6	50	980 50
.....	70	....	....	....	15	90	....	.....	....	.....	....	.....	35	5	40	878 50
.....	603	....	10	....	36	650	....	.....	....	.....	....	.....	300	50	400	7,615 00
.....	55	....	....	....	12	.....	....	.....	....	.....	....	.....	25	6	60	1,632 00
.....	80	....	....	....	10	.....	....	.....	....	.....	....	24000	40	8	50	3,713 00
50	.....	....	....	....	....	.....	....	500	...	600	5	.....	.....	.....	....	1,111 00
.....	60	....	....	....	6	200	....	.....	....	.....	....	.....	30	6	40	1,197 00
.....	50	....	....	....	5	120	....	.....	....	.....	....	.....	25	5	30	691 50
2050	.....	....	....	....	....	.....	25	1750	....	18200	14	....	.....	.....	....	11,637 00
1250	8438	12	50	480	150	5000	....	200	60	6100	23	20200	6175	315	....	54,866 50
505	.....	....	....	....	....	.....	....	2250	....	.....	12	.....	.....	.....	....	2,882 50
3939	18634	44	60	550	517	11260	25	8050	60	27100	222	121088	11696	2056	1617	163,548 96

Shipped to United States, live lobsters	$ 2,720 00
175 barrels clams, at $7.00	1,225 00
	3,945 00
	$ 167,493 96

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in

DISTRICT.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.				
	Vessels.				Boats.			Nets.		Weirs and Traps.		
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	No.	Value.	Salmon, fresh, in ice, lbs.
Shelburne Co.			$			$			$		$	
Barrington	7	319	10250	71	42	1000	37	11640	951	....	.....	540
Wood's Harbor	4	67	1600	24	92	1826	93	20000	1651	1	2000	....
Shag Harbor	4	87	2350	30	35	775	30	15000	1250	....	.....	....
Bear Point	2	34	700	18	50	960	29	10710	950	....	.....	....
Cape Island	6	373	12250	69	325	6350	380	35000	4575	*7	10125	....
Port Latour and Baccaro	2	22	505	7	196	2744	110	53000	4050	....	.....	....
Upper Port Latour	1	29	250	5	37	350	40	5160	600	....	.....	....
Cape Negro and Blanche	....	....	.....	....	63	698	60	11600	725	....	.....	....
Cape Negro Island	....	....	.....	....	46	850	48	5600	850	1	950	....
Port Clyde	....	....	.....	....	3	15	3	400	30	....	.....	3350
N. E. Harbor and East Clyde	....	....	....	....	16	700	22	6300	900	....	.....	700
Black Point and Red Head	....	....	.....	....	42	2950	90	19300	1450	....	.....	....
Roseway and McNutt's Island	....	....	.....	....	45	2800	80	15750	1600	....	.....	....
Churchover and Birchtown	....	....	.....	....	33	1450	58	5000	500	....	.....	180
Shelburne and Sandy Point	5	504	21500	92	45	920	68	18750	2000	....	.....	500
Jordan Ferry	....	....	.....	..	27	850	38	5000	500	....	.....	200
Jordan Bay	2	193	7500	38	16	800	25	7500	700	....	.....	....
Lockeport	19	1480	80000	300	45	2300	80	8000	1000	....	.....	225
Total	52	3108	136705	654	1158	28338	1291	254210	24282	9	13075	5695

the Fisheries, Quantity and Value of Fishing Material, &c.—**Nova Scotia**—*Con.*

Kinds of Fish.											Fish Products.		Value.
Mackerel, barrels.	Herrings, barrels.	Alewives, barrels.	Cod, cwt.	Pollock, cwt.	Haddock, cwt.	Halibut, lbs.	Trout, lbs.	Smelt, lbs.	Eels, barrels.	Lobsters, cans.	Fish Oil, gallons.	Fish used as bait, barrels.	$ cts.
13	375	490	4212	141	383	14600	525	.....	60	.....	1955	2059	28,035 00
35	1675	.....	279	12	75	12000	.....	.....	.....	106270	50	3250	27,536 40
28	610	.....	1400	111	225	8000	.....	.....	.....	.....	380	305	11,213 50
11	220	.....	850	40	324	2400	.....	.....	.....	120000	331	325	21,160 90
50	3360	.....	12000	250	3350	80000	.....	.....	.....	.....	5250	5000	94,040 00
103	1051	26	1500	2562	1035	1800	.....	.....	.....	.....	4067	1325	30,048 30
45	460	20	1000	250	300	3000	.....	.....	.....	.....	1050	380	10,095 00
13	852	12	1000	55	600	.....	.....	.....	.....	.....	1591	150	11,138 40
90	1400	.....	2575	300	900	3000	.....	.....	.....	.....	2600	600	24,290 00
.....	.....	300	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,080 00
.....	165	30	300	.....	60	.....	.....	.....	12	.....	160	.....	2,559 00
.....	1637	.....	888	4	1000	.....	.....	.....	.....	.....	625	50	14,441 00
.....	1410	25	727	229	764	.....	.....	.....	.....	.....	1615	40	13,338 50
.....	462	50	172	.....	202	.....	.....	.....	.....	.....	175	.....	3,675 00
.....	1860	35	8200	.....	354	.....	5000	.....	.....	.....	2635	300	43,917 50
.....	150	.....	100	.....	160	.....	.....	10000	.....	30912	80	.....	6,021 44
.....	834	.....	3490	.....	257	.....	.....	.....	.....	39000	1300	.....	23,524 00
100	2000	35	28000	25	600	30000	1000	.....	.....	22560	6000	.....	132,559 70
488	18521	1023	66708	3979	10589	154800	6525	10000	72	318742	29864	13784	500,573 64
													*115,730 00
													616,303 64

*Live lobsters exported, 2,079,500, at 4c..... $83,180 00
Fresh mackerel shipped, in ice, 542,500, at 6c..... 32,550 00

$115,730 00*

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in

DISTRICT.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.						
	Vessels.				Boats.			Nets.		Weirs.				
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	No.	Value.	Salmon, fresh, in ice, lbs.	Mackerel, barrels.	Herrings, barrels.
Yarmouth Co.			$			$			$		$			
Arcadia and Little River					130	4500	230	5000	1200	*1	2000		130	280
Tusket Wedge	10	714	20000	170	30	1500	80	14000	5500	*1	2000		250	500
Salmon River					60	600	75	12000	4000			900		
Tusket	2	47	1200	12	180	2500	200	30000	7500			1500	120	320
East River					60	600	70	8000	2000			500		
Eel Lake and Eel Brook	1	18	700	10	50	400	80	2000	1500				40	450
Argyle	2	131	6500	26	60	1000	110	5000	1600				45	125
Argyle Sound					55	1400	120	9000	4000				180	650
East and West Pubnico	27	1896	115000	528	45	2200	90	15000	6000	*1	2000		230	150
Yarmouth	25	1775	64420	375	56	800	104	6000	2200	*3	6000	16000	505	4630
Maitland	9	83	2000	38	31	500	58	3800	1800	*3	7000		370	790
Sanford	3	40	1300	16	43	760	84	4600	2160	*2	4000		725	1836
Totals	79	4704	211120	1175	800	16760	1301	114400	39260	11	23000	18900	2595	9731

*Traps.

the Fisheries, Quantity and Value of Fishing Material, &c.—**Nova Scotia**—*Con.*

Kinds of Fish.													Fish Products.			
Herrings, smoked, in boxes.	Alewives, barrels.	Cod, cwt.	Cod Tongues and Sounds, brls.	Pollock, cwt.	Hake, cwt.	Haddock, cwt.	Halibut, lbs.	Shad, barrels.	Trout, lbs.	Smelt, lbs.	Eels, barrels.	Lobsters, cans.	Fish Oil, gallons.	Fish used as bait, barrels.	Fish used as manure, barrels.	Value.
																$ cts.
....	20	140	2	30	....	120	4500	....	.....	1500	12	94400	40	....	500	16,594 00
....	60	9620	20	395	....	550	9620	....	.....	.....	....	.....	4700	....	....	51,322 00
....	1870	.....	....	.....	....	.....	.....	....	350	12000	16	.....	.....	....	....	9,510 00
....	2240	360	4	50	....	80	.....	....	1200	25000	60	.....	140	....	....	17,736 00
....	760	.....	....	.....	....	.....	.....	....	800	.....	15	.....	.....	....	....	3,750 00
....	650	250	2	50	20	50	.....	....	.....	6000	280	.....	60	....	....	10,009 00
....	380	2150	2	.....	....	.....	.....	....	.....	.....	25	38400	1000	....	200	16,863 00
....	35	350	....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....	....	6,857 50
....	40	22220	54	445	....	3095	15000	8	.....	.....	60	21264	9868	....	200	116,588 88
400	....	32600	21	3860	....	3685	20600	....	600	.....	20	38000	7500	400	....	200,665 00
....	....	1610	5	680	....	260	10000	....	.....	.....	....	.....	1000	120	....	20,540 00
....	....	1200	4	460	....	145	44000	....	.....	.....	....	.....	860	85	....	30,350 50
400	6055	70500	114	5970	20	7985	103720	8	2950	44500	488	192064	25168	605	900	499,985 88

Live Lobsters shipped to the United States, 1,600 tons, at $35.....	$56,000 00	
Smoked Alewives, 150,000, at 80c. per 100.....	1,200 00	
		57,200 00
		$557,985 88

RECAPITULATION of the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries, Quantity and Value of Fishing Material, Kinds and Quantities of Fish, and the Total Number of Men Employed in District No. 3 of the **Province of Nova Scotia,** for the Year 1889.

COUNTIES.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.				KINDS OF FISH.						
	Vessels.				Boats.			Nets.		Weirs.								
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	No.	Value.	Salmon, fresh, in ice, lbs.	Salmon, smoked, lbs.	Mackerel, barrels.	Herring, barrels.	Herring, smoked, in boxes.	Alewives, barrels.	Cod, cwt.
District No. 3.			$			$			$		$							
Annapolis	9	211	6220	57	201	3830	404	14890	7615	25	4240	5240	.....	.....	4097	18570	20	3677
Digby	50	1184	39200	379	337	13910	839	47650	25055	22	2650	100	.....	.....	1520	1480	.....	70009
King's	8	108	1800	22	63	1110	114	19700	9400	37	9000	18600	.....	6	3595	13680	1250	887
Lunenburg	182	14668	786200	2495	1454	41983	1507	599475	93713	6	3000	13730	665	6920	12387	.....	662	166561
Queen's	19	1423	61700	259	479	10651	666	27375	.....	.....	.....	24900	400	309	6819	.....	3939	18634
Shelburne	52	3108	136705	654	1158	28338	1291	254210	24282	9	13075	5695	.....	488	18521	.....	1023	66708
Yarmouth	79	4704	211120	1175	800	16760	1301	114400	39260	11	23000	18900	.....	2595	9731	400	6055	70500
Totals	399	25406	1242945	5041	4492	116582	6122	1077700	199325	110	54965	87165	1065	10318	56670	34130	12949	396976

RECAPITULATION of the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries, &c.—**Nova Scotia**—*Concluded.*

COUNTIES.	KINDS OF FISH.												FISH PRODUCTS.					VALUE.
	Cod Tongues and Sounds, brls.	Pollock, cwt.	Hake, cwt.	Haddock, cwt.	Halibut, lbs.	Shad, barrels.	Bass, lbs.	Trout, lbs.	Squid, barrels.	Smelt, lbs.	Eels, barrels.	Lobsters, Cans.	Fish, Oil, gallons.	Hake Sounds, lbs.	Fish Guano, tons.	Fish used as bait, barrels.	Fish used as manure, barrels.	
District No. 3.																		$ cts.
Annapolis	29	912	2693	3375	30748	5	1840	4700	....	.....	9	.....	4071	2570	351	31425	70	95,738 10
Digby	80	39683	57125	58180	210000	3	.....	500	....	1000	24	22896	94800	24780	.....	17145	8090	1,090,983 02
King's	....	567	.....	780	1500	418	.....	1750	....	9000	10	.....	550	.....	.....	737	1700	43,490 50
Lunenburg	570	3695	3375	10285	466590	14	.....	1390	353	10825	161	286238	80325	1225	26	2217	266	1,023,992 56
Queen's	44	60	550	517	11260	25	.....	8050	60	27100	222	121088	11696	.....	.....	2056	1617	167,493 96
Shelburne	....	3979	.....	10589	154800	...	.....	6525	....	10000	72	318742	29864	.....	.....	13784	....	616,303 64
Yarmouth	114	5970	20	7985	103720	8	.....	2950	....	44500	488	192064	25168	.....	.....	605	900	558,785 88
Total	837	54866	63763	91711	978618	473	1840	25865	413	102425	986	941028	246474	28575	377	39686	12643	3,595,987 66

Added to above:—

Annapolis—Fresh lobsters	$ 9,135 00	
Digby—Live lobsters shipped to United States Fresh haddock Finnan haddies	67,135 00	
Lunenburg—Clams Scallops	1,000 00	
Queen's—Live lobsters shipped to United States Clams	3,945 00	
Shelburne—Live lobsters shipped to United States Fresh mackerel do	115,730 00	
Yarmouth—Live lobsters do Smoked alewives	57,200 00	
		254,145 00
Total		$ 3,850,133 66

RECAPITULATION OF THE YIELD OF THE FISHERIES FOR DISTRICT No. 3, **Nova Scotia**, 1889.

Kinds of Products.		Quantities.	Rate.	Value.
			$ cts.	$ cts.
Salmon, fresh	lbs.	87,165	0 20	17,433 00
do smoked	lbs.	1,065	0 20	213 00
Mackerel, pickled	brls.	10,318	15 00	154,770 00
do shipped, fresh	fish.	542,500	0 06	32,550 00
Herrings, pickled	brls.	56,670	4 00	226,680 00
do smoked	boxes.	34,130	0 25	8,532 50
Alewives, pickled	brls.	12,949	4 50	58,270 50
do smoked	fish.	150,000	80c. per 100	1,200 00
Cod, dried	cwt.	396,976	4 00	1,587,904 00
do tongues and sounds	brls.	837	10 00	8,370 00
Pollock, dried	cwt.	54,866	4 00	219,464 00
Hake, dried	cwt.	63,763	4 00	255,052 00
do sound	lbs.	28,575	1 00	28,575 00
Haddock, dried	cwt.	91,711	4 00	366,844 00
do fresh	lbs.	750,000	0 04	30,000 00
Finnan haddies	fish.	140,000	0 08	11,200 00
Halibut	lbs.	978,618	0 10	97,861 80
Shad	brls.	473	10 00	4,730 00
Bass	lbs.	1,840	0 06	110 40
Trout	lbs.	25,865	0 10	2,586 50
Squid	brls.	413	4 00	1,652 00
Smelt	lbs.	102,425	0 06	6,145 50
Eels	brls.	986	10 00	9,860 00
Lobsters, preserved	cans.	941,028	0 12	112,923 36
do shipped alive	tons.	2,602	35 00	91,070 00
do do	fish.	2,147,500	0 04	85,900 00
Fish oil	galls.	246,474	0 40	98,589 60
do guano	tons.	377	35 00	9,425 00
do used as bait	brls.	39,686	1 50	59,529 00
do do manure	brls.	12,643	0 50	6,321 50
				*2,225 00
				3,595,987 66

*Miscellaneous. *See* County Returns—

Clams, Lunenburg	600 00
do Queen's	1,225 00
Scallops, Lunenburg	400 00
	2,225 00

TABLE showing the Number and Value of Vessels and Boats, Nets and Weirs, engaged in the Fisheries of District No. 3 of **Nova Scotia**, and Approximate Estimates of other Material not included in the Returns.

Articles.	$ cts.	$ cts.
399 vessels		1,242,945 00
4,492 boats		116,582 00
1,077,700 square fathoms of nets		199,325 00
110 weirs		54,965 00
		1,613,817 00
Canning Establishments	55,300 00	
Seines not included in above	7,700 00	
Lobster traps and nets	30,000 00	
Steamers and smacks	9,100 00	
Smoke houses, &c	2,400 00	
		104,500 00
		1,718,317 00

RECAPITULATION of the yield of Fisheries in the whole Province of **Nova Scotia**, 1889.

Kinds of Fish.		Quantities.	Value.	Total.
			$ cts.	$ cts.
Salmon, pickled	brls	2,377	38,032 00	
do fresh	lbs.	407,454	81,490 40	
do smoked	do	7,516	1,503 00	
do preserved in cans	do	9,784	1,466 80	
				122,492 20
Mackerel, pickled	brls.	43,038	586,317 00	
do preserved in cans	lbs.	62,258	7,470 40	
do fresh	No.	542,500	32,550 00	
				626,337 40
Herrings, pickled	brls.	127,605	529,432 00	
do smoked	boxes	35,835	8,958 50	
do in cans	lbs.	5,760	691 20	
				539,081 70
Alewives	brls.	22,858	102,862 00	
do smoked	No.	150,000	1,200 00	
				104,062 00
Cod, dried	cwt.	587,558	2,350,232 00	
do tongues and sounds	brls.	1,328	13,280 00	
				2,363,512 00
Pollock	cwt.	56,326		225,304 00
Hake	do	79,690	318,760 00	
do sounds	lbs.	42,328	42,328 00	
				361,088 00
Haddock, dried	cwt.	115,581	462,324 00	
do fresh	lbs.	750,000	30,000 00	
do finnan haddies	No.	140,000	11,200 00	
				503,524 00
Halibut	lbs.	1,155,920		115,592 40
Shad	brls.	1,012		9,585 00
Bass	lbs.	251,541		1,608 40
Trout	do	148,446		14,844 80
Squid	brls.	11,360		45,440 00
Smelts	lbs.	480,760		28,845 50
Eels	brls.	3,468		34,680 00
Oysters	do	2,532		7,596 00
Lobsters, in cans	lbs.	6,181,763	741,811 80	
do fresh	tons.	2,602	} 176,970 00	
do alive	No.	2,147,500		
				918,781 80
Fish oil	galls.	368,290		147,315 80
Guano	tons.	661		16,525 00
Fish used as bait	brls.	59,102		88,653 50
do manure	do	18,256		9,127 50
Clams				1,825 00
Scallops				400 00
Fish sold in Halifax market, not included above				40,500 00
do consumed in Richmond Co., not included above				20,000 00
Total Value, 1889				6,346,722 00
do 1888				7,817,030 42
Decrease				1,470,308 42

APPENDIX No. 4.

NEW BRUNSWICK.

DISTRICT No. 1.

REPORT ON THE FISHERIES OF THE COUNTY OF CHARLOTTE, NEW BRUNSWICK, FOR THE YEAR 1889, BY INSPECTOR JOHN H. PRATT.

St. Andrews, N.B., 31st December, 1889.

To the Hon. Charles H. Tupper,
Minister of Marine and Fisheries.

Sir, I have the honor to submit herewith my first annual report on the fisheries of the western division of New Brunswick, together with condensed reports of the several fishery officers and tabulated statements of product and values.

These reports show a falling off in the total catch, due mainly to a less vigorous prosecution of the fisheries, and a large reduction in the demand for sardine herring which were never so plentiful as this season; but the prices dropped so low that it would not pay the outlay necessary to rebuild many badly damaged weirs.

On the St. Croix River, there are thirteen sawmills, some of which are on the United States side of the river; each of these allowing their sawdust to escape into the stream. It has been exempted from the operations of the Statute prohibiting sawdust from being thrown into rivers; but, as the output of lumber is annually decreasing, this evil will ultimately enact its own cure. The cotton mills are also situated on this river and allow the contents of their dyehouse vats (when the dyeing operations are completed) to escape into the river; but the attention of your Department having been called to this matter in former reports, I have no doubt it will receive every attention at your hands. There were several sawmills in operation on the Magaguadavic River during the past season. It had been the custom to allow all sawdust and mill refuse to run into the river. One mill I succeeded in stopping from further dumping sawdust into the stream, and the others which are situated some distance up stream have been notified that such illegal practices shall not be allowed to continue next season with impunity.

The several close seasons have, as a general rule, been very well observed; but I regret to say that there are many fishermen who can only be kept in check by fear of the law, and who require constant and vigilant watching.

A careful personal inspection has been made of all the fishways in my division. With one or two exceptions, where slight repairs are required, they are all in excellent condition and serve the intended purposes admirably.

While on a tour of inspection, I visited Lake Utopia (a splendid sheet of water situated near St. George) and found that a party of wealthy gentlemen had erected a club-house, and intended next season to build a number of cottages, and they stated that it was their intention to plant a quantity of salmon fry next season in this lake at their own expense. Owing to its fine gravelly beds, and the lakes and streams flowing into it, it would be an unexcelled location for the reception of a quantity of the coming stock of salmon fry, and I would respectfully suggest that the Department consider favorably the advisability of planting some in this lake next season.

With reference to the salmon fry planted in the inland waters of Charlotte county, I may say that the results appear most encouraging, due to the protection given by efficient fishery officers, and the facilities afforded by these waters for

spawning purposes. Poaching which was hitherto praticed on a large scale on the St. Croix River has now been completely stopped, thanks to the earnest efforts of our border fishery officers and of those of the United States. I might mention that the State of Maine Commissioners are most anxious to assist in having this river re-stocked with salmon; they being fully aware of its many advantages for the purposes of fish culture.

SALMON.

This branch of the fisheries is confined to the Chamcook Lakes and Ste. Croix River; and as fishing is principally carried on by sportsmen, it is impossible to obtain the correct statistics. The salmon fry planted in these waters have been productive of highly gratifying results to overseers and sportsmen, and afford ample proof of the success which has attended the planting of fry in the rivers and other waters of this county.

Thorough protection and strict observance of the close seasons will ultimately lead to the end so earnestly desired by your Department, that of re-stocking the rivers and lakes of this division.

MACKEREL.

This is a fish which has been very seldom seen of late years in these waters, although the catch was large at one time and yielded fair profits; but for some unknown reason, they do not school now, and only a few were taken this season.

HERRING.

The catch of herring shows a large increase over last year, and it is quite a pleasure to report that instead of decreasing, as some confidently predicted, they swarmed into every weir and cove, in larger schools than ever. In several weirs the fish were allowed to swim in and out; the supply, which far exceeded the demand, having made prices very low. The quantity of pickled herrings was below that of last year, but frozen and smoked herrings show quite an increase. At the present time our fishermen are putting their gear and vessels in order so as to prosecute winter fishing on the Penfield shore, where herrings usually strike about the 1st day of January.

HALIBUT.

The returns show a pleasing increase in the catch of halibut over that of last year. Nearly all the fish were caught at Grand Manan, although small quantities were recently taken with trawls in St. Andrew's Bay and Penfield shores.

COD AND HADDOCK.

A decrease is noticeable in the number of these fish taken this year. This is not due to any scarcity of fish, but to a less vigorous prosecution of the fishery. All that were taken found a ready market at remunerative prices.

POLLOCK.

The returns also show a decrease in the yield of this fish. This is also attributed to a less vigorous prosecution of the fishery.

HAKE.

No change is noticeable in the catch of hake, and I am pleased to report that fishermen are still catching them in large numbers.

TROUT.

It is somewhat difficult to ascertain, with any degree of accuracy, the number of trout caught during the season, owing to these fish being mostly taken with the fly, but the returns show a large increase over last year's catch.

FROSTFISH, SQUID AND FLOUNDERS.

As shown by the returns, the catch of the above-named fish evince no material difference from last year, and our fishermen experienced no difficulty in making large hauls when prosecuting this branch of the fisheries.

SMELT AND PICKEREL.

These fisheries are not entered into with any degree of vigor in this division, the fishermen preferring the more remunerative pursuits of herring and line fishing.

SARDINES.

The number of sardine herring taken this year shows an increase over last year's returns; but, as the supply far exceeded the demand, this caused a very depressing influence on prices. There was no illegal seining nor "torching" carried on this season, owing to the means adopted by the Department to enforce the fishery regulations.

OYSTERS.

This crustacean is not a native of this division, but an experiment is being tried this season by a Montreal firm to plant several barrels of seed oysters in Passamaquoddy Bay. I have been endeavoring to obtain all possible information in reference to the artificial breeding of oysters, with a view to discover other localities where its cultivation might be successfully carried on.

LOBSTERS.

A decrease is observed in this branch of the fishing industry, due partly to its not being prosecuted with the same vigor as in former years, as well as to a slight decrease in numbers and to the statistics being made with more care than in years gone by. I have not the slightest doubt but this fishery will return to its former importance if the regulations regarding close seasons and minimum size of lobsters are strictly enforced.

Appended hereto are the reports of the several local fishery officers of this division, together with the usual statistics.

In concluding this report I have much pleasure in testifying to the ready assistance given me by the several fishery officers of this division. They have always, without a single exception, manifested an earnest desire to perform their duties, which are at times very trying, to the satisfaction of Department.

I have the honor to be, Sir,
Your obedient servant,

JOHN H. PRATT,
Inspector of Fisheries, Western Division of New Brunswick.

SYNOPSES OF FISHERY OVERSEERS' REPORTS.

Overseer McLaughlin, of Grand Manan, reports as follows:—There is an increase in herring for smoking purposes, and a slight increase in the catch of hake over last year; but in all other kinds of fish taken in the waters of Grand Manan, there is a slight falling off, except in mackerel, halibut, and haddock. The increase in the catch of herring is attributed to the building of four new weirs; all being deep water weirs which catch large medium herring. The residents are building a finer class of boats for herring fishing, and where 90 years ago the weir boats would take about five hogsheads to a boat, now one that takes less than twenty hogsheads is considered a small boat. Many of these boats are also used in line fishing. There was a slight falling off in the catch of cod and pollock; not an account of any lack of fish on the old fishing grounds, but, for some cause unknown, they refused to take the bait. This Overseer's opinion is that the fish were surfeited with herring as in

nearly every case when large fish were taken, their stomach's were found full of large herring. As a rule, there was a vigorous prosecution of the fisheries in this district; the only abuse being the slaughter of small lobsters. This seems to be an abuse which cannot be effectually reached, and this season exceeds any thing of the kind ever known before. In this officer's opinion, the lobster fishery will not be worth the money expended in its protection, until a regulation is passed compelling fishermen to have their names on their cars; all cars in which short and spawn lobsters are found to be immediately destroyed. Vigorous efforts were made to save the lobsters this season, and thousands of illegal fish were returned to the water, along with a great many legal fish. The visits of the Fisheries Protection steamer "Dream" to the waters of this distict, were a great help at that time. The several close seasons which are of great importance to the preservation of the fine fisheries of this division were only observed so far as the Overseer compelled their observance. One-third of the fishermen will comply with the law, but seizures, fines, and confiscations are the only remedies to ensure compliance with the other two-thirds.

Overseer Ash, of Beaver Harbor, reports a fair catch of line fish, about the same as last year. Sardine-herring plentiful, but so low in price that fishermen were unable to make any wages by catching them. Large herrings were extremely plentiful. Lobsters show a gain over last year's catch due to a more vigorous prosecution of this fishery. The close seasons were duly observed. The total catch is about the same as last year.

Overseer Todd, of St. Stephen, reports the total catch of fish in his district to have been below that of last year, especially that of salmon and sardine-herrings. In the case of salmon, the falling off was due to the abolishment of swing-nets, by which means all these fish were heretofore taken, except those captured with the rod. The early run of salmon was not large, but during the months of August and September immense numbers passed up the river. The catch of sardine-herring would have been as large as last year had there been a market for the fish. They could only be sold during July and August, and then the prices realized were only one-third those of 1888.

The close seasons were well observed, and the night watchman employed by direction of the Department; acting with the America Warden, entirely prevented drifting for salmon. There are five fish-ways on the St. Croix and two on Denis stream, all in good repair. That at Baring should be lengthened.

Overseer Lord, of West Isles, sends the following report: This has not been a prosperous season for the fishermen of this district. This was not due to scarcity of fish, as the catch, except that of lobsters having been fully up to the average of past seasons, but to the low prices paid for sardines. Lobsters show a large falling off, owing to the close season beginning so early in the summer. There was an abundance of sardines, the catch of some five thousand hogsheads last year having been fully doubled this season. But while prices of all kinds of line fish were fully up to the average, that for sardines, owing to the large catch, ruled very low, the same as when this business was in its infancy. The majority of the fishermen of this district being engaged in this business, feel the effect of low prices very materially. The large catch of herring and the low prices of sardines induced those who were properly situated to smoke large quantities, so that while about 10,000 boxes were reported from this district last year, there were fully 75,000 boxes this year; but prices, owing to the large amount smoked, were very low, leaving but a small profit, if any. This large catch is attributed to the protection of the spawning grounds. No fines or forfeitures are reported, fishermen as general rule, with few exceptions, being willing to observe the laws.

Overseer Campbell, of St. Andrew's Bay, reports that this year has been an unprofitable one to the fishermen of his district. The main fishing industry is the taking of sardine-herring for the American canneries at Eastport, Maine. Owing to various causes the output of those factories was small as compared with other years, while the supply of herring in St. Andrew's Bay was abundant. The fish were so plentiful in the waters of this county that buyers did not resort to the inner

bay for fish, and, as a consequence, sales were small and prices low, not averaging over $2.50 per hogshead, while some sold as low as $1. Owing to these causes, several weirs were not fished at all, nor put in order for fishing; many which were repaired were not seined once in the season. The great excitement and competition for weir priveleges of 1887 and 1888 is past and over, and not likely to come up again. There was but little more than half the weirs fished or licenses renewed in 1889 as compared with 1888. In connection with the sardine fishing, this overseer recommends that the Department fix some limit as to the size of the herring allowed to be caught—say 7 inches. Much difficulty has been experienced in preventing the wholesale use of small herrings for manure and compost.

There was not much line fishing in this district, and only for local consumption. Net herring were not very plentiful in Quoddy Bay last winter, but some were taken and prices were fair.

Lobster fishing was about the same as in 1888 and the lobsters were of a fair size. This officer was unable to find lobsters taken under the legal size, and he does not believe that any were caught smaller than 9½ inches. These are all sent fresh to the United States or to Canadian markets, and not to the factories. It is perhaps for this reason that there has been so few temptations to take the smaller fish. Numbers of cages and several large lots of lobsters ready for shipment were examined, and none found under the legal size. The present close time should be maintained for two or three years if the lobster fishery is to be preserved. There was no "torching" for herring during the year, owing to the sardine-herrings being so plentiful; but there will always be trouble whenever a scarcity of the fish makes them fetch higher prices.

Messrs. D. Hatton & Co., Montreal, oyster dealers, after a visit to our waters by one of the firm, sent down and planted several barrels of seed oysters, with the view of cultivating these mollusks. These were planted near the mouths of Digdeguash and Bocabec rivers, and the experiment will be watched with interest. This officer afforded the Messrs. Hatton all the assistance in his power in showing them over the district, and they seemed to think the trial would be a success. Land-locked salmon in Chamcook lakes are growing in numbers and size, and afforded fine sport in May and June.

Overseer Brown, of Campo Bello, reports that an average catch of all kinds of fish, except herring for smoking purposes, and lobsters. Although there were more herring smoked than usual, the greater part were bought by the hogshead from weirs in West Isles district and then smoked. Half the weirs did nothing, on account of prices for smoked herring being so low that nothing could be made by putting up smoked herring. The catch of lobsters was not so large as last year, owing to this branch of fishery not being prosecuted so vigorously as in the past. Winter herring yielded about an average catch, but the mildness of the winter injuriously affected prices. Cod, hake, haddock and pollock yielded a fair catch and prices held good. So long as the inshore fisheries of this district are protected against foreign intrusion the fish will increase and prices hold good. Should smoked herring advance in price our fishermen will do well, large stocks being held back for an advance. But should the winter be mild, they will have a hard struggle to make both ends meet. The close seasons were well observed in this district during the past year.

Overseer Barry, of St. George, reports a somewhat small catch of alewives at the head of tide on Magaguadavic River during the spring of the year. These fish are all used for home consumption; the close seasons were well observed. Trout in this district are, as a rule, taken only for sport, and not for commercial purposes. These fish were, as usual, abundant. No abuses exist of which this officer is aware. The six fish-ways—four at the lower falls, one at the second falls and one on Linton stream—are in good repair and were kept so during the season. The dam at the lower end of the fishway across the main river at Lower Falls was carried away by freshets, and the fish are likely to pass up by the main river instead of going up by the fish-way. This dam has been standing for sixty years. This officer suggests that it be rebuilt, as it would not need a very large outlay.

DISTRICT No. 2.

REPORT ON THE FISHERIES OF DISTRICT No. 2, COMPRISING THE COUNTIES OF RESTIGOUCHE, GLOUCESTER, NORTHUMBERLAND, KENT AND WESTMORELAND, FOR THE YEAR 1889, BY INSPECTOR R. A. CHAPMAN.

Moncton 31st December, 1889.

Hon. Charles H. Tupper,
Minister of Marine and Fisheries.

Sir,—I have the honor to submit my first report on the fisheries of the counties of Restigouche, Gloucester, Northumberland, Kent and Westmoreland, in the Province of New Brunswick, for the year 1889, with extracts &c., from the reports of local fishery officers. The returns show an actual increase in quantity over last year, though, owing to causes given in my special report, there is no corresponding increase in the sum total. I am quite sure, from the best information I have been able to collect from all parts of my district, that what is wanted is thorough protection during the spawning time of the different kinds of fish, and if this is thoroughly done there is very little to fear from over-fishing. In this connection I would beg to recommend that all rivers (in which fish breed) should be at once opened by proper and efficient fish-ways wherever mills are built thereon, and, that the law and regulations in force against throwing sawdust and other refuse in such streams be strictly enforced.

SHAD.

There is an immense increase over the catch of last year, but to renew the nearly exhausted supply of this fine fish it is absolutely necessary to make a regulation prohibiting their being taken before 1st July. These fish come into St. John harbour during the latter part of May, and what are not caught go up into fresh waters to spawn during the first half of June, and then proceed up to the feeding grounds, arriving about the 20th of June in Westmoreland, Cumberland, &c. It is not over-fishing that has destroyed the once lucrative Shad fishery, but the catching of gravid fish in St. John River and harbor during the month of June, when they are on their way to the spawning grounds.

SALMON.

The returns show a falling off in the Miramichi, but a small increase in most other districts; yet the run of salmon in nearly all of the rivers, and especially in the Miramichi was greater this fall than for many years. It cannot be that over-fishing has much to do with the supply, when we consider that the whole reported catch is only equal to about 120,000 fish, or about what the spawn of fifteen or twenty full grown parent fish would produce under favorable circumstances. No doubt some years a large proportion of spawn is lost from natural causes, and in other years more mature; consequently, we will have years of scarcity and years of plenty, but certainly what is wanted is good protection of the parent fish, as well as of the spawning grounds, and with this I am satisfied there is little danger of over-fishing on the coasts, whatever there may be in the estuaries and rivers.

BASS.

I can say little about this fish until the result of present regulations has developed.

HERRINGS.

An increase is reported in the quantity of herrings taken, and there seems to be no scarcity of or diminution in this very important local food product.

SMELTS.

The catch of 1888, was very large, but the fish were smaller in size, I believe, than usual; and this year, I have been among the fishermen, and find the fish exceedingly small, and consequently only worth about half of last year's prices. It would appear from this that smelts are being over-fished, and that some scheme should be devised to prevent the great increase which is yearly taking place in the number of bag nets.

COD.

A marked increase is reported in the catch of this staple fish, especially in Gloucester County, where people appear to be giving more attention to this fishery than ever heretofore.

MACKEREL.

There is again a very small catch to report of this valuable product of the sea, due more, it would appear, to the uncertain movements of these fish than to any general scarcity, as large numbers were reported on the coast of Nova Scotia late this season.

TROUT.

The same may be said of trout as of salmon with reference to protection, &c., but this is rendered very difficult, owing to provincial and reparian rights on small streams.

LOBSTERS.

The past has been a fair year for this fishery, but I am satisfied from the full enquiries I made that something must be done to prevent the using of so many small lobsters when the officers are not around, and in connection with this matter I would beg to suggest that the traps be made with slats so open and nets with meshes sufficiently large as to allow of undersized ones to escape. There is no doubt but the destruction of useless small fish is very large.

OYSTERS.

The oyster beds in Gloucester and Northumberland are very productive, and appear to be increasing rather than diminishing; but most of the local officers say that winter fishing has destroyed the beds in Kent and Westmoreland, and that it will do the same in the first mentioned counties, if allowed, as the small fish are left on the ice to perish, in place of being put back into the water.

SYNOPSES OF FISHERY OVERSEERS' REPORTS.

RESTIGOUCHE COUNTY.

Overseer J. A. Verge, of the River Division, reports the catch of salmon for 1889 as amounting to 71,200 lbs., against 55,116 lbs. for 1888, an increase of 16,084 lbs. There was no big run of fish at any time, but a fairly good daily catch of fine, large fish. The Sunday close time was well observed, the licensees doing their best to comply with the Fisheries Act and regulations.

Overseer A. McPherson, of the Coast Division states that the catch of salmon in his district while still under the average, was better than last year. He reports a further decline in the quantity of lobsters taken year by year and that this valuable fish appears to be getting scarcer. He suggests a change in mode of building lobster traps, which if it were enforced, would in his opinion enable all undersized lobsters to escape—that is by leaving a space of about 2 inches between the bottom of the traps and the laths on both sides. Any lobster that could pass through that space would be

practically useless to packers. There are at present no fish-ways in this districts. One was built on Charlo River and carried away by last fall's freshet. The owner has been notified to replace it.

GLOUCESTER COUNTY.

Overseer F. Comeau reports the present year as rather an off one as regards the salmon fishery in his district. In his opinion, the fish are not so well protected on the spawning grounds as they should be, and are over-fished in the streams. The regulations are carefully observed.

There is a large increase in the catch of codfish, due to a more vigorous prosecution of this fishing. Lobster fishing is getting worse every year. The only way of saving this fishery is to get the canners to make their traps with the slats for enough apart to allow of the small ones escaping.

Overseer Hickson reports, that the fishermen had a good average year, codfishing particularly, being above the average. The coast salmon fishery shows a falling off. The angling season was a poor one. The Nepissiguit is over-fished, although the protection is good and the close time strictly enforced. It appears as if the fishermen all over the county were getting more appreciative of the policy of protection of the valuable fisheries of the coast, and there is a desire among them to meet the various regulations made by the Department much more readily than formerly.

Overseer J. Poirier reports that salmon fishing is very poor, but lobster fishing something better than last year.

Overseer G. Cormier reports an increase in the catch of codfish of about 11,000 quintals. The yield of other fish is about the same, except a small increase in mackrel. There was a good run of fall herrings but codfish being abundant, the fishermen neglected the former for the latter.

Overseer Joseph L. Hache reports fishing as very successful—Cod, smelt, and trout show an increase over last year, but oysters are something less.

Overseer Adolphe Ache reports the catch of salmon during season just passed as very poor. Herring were plentiful in the spring but the fall fishery almost completely failed, owing to the large fleet of Nova Scotia and Prince Edward Island schooners surrounding the Miscou banks with their innumerable nets and preventing our fishermen having access to the fishing grounds. The quantity of codfish taken would have been much larger only for the want of bait. There is a falling off in the catch of lobsters.

Overseer A. Boyd reports a small increase in lobsters and cod, and states that, the regulations were well observed.

Overseer W. Walsh's returns show that there is little change in his district from last year.

Overseer Olivier Robichaud reports an increase in the catch of smelts, lobsters, mackerel, codfish and hake; lobsters about the same.

NORTHUMBERLAND COUNTY.

Overseer Prudent Robichaud reports codfishing as very good during the summer but indifferent in the fall, owing to stormy weather. Salmon struck in early and fishing was good for a time, but owing to stormy weather the whole catch falls short of last year's. Mackerel fishing better than last year.

Overseer J. Stymest reports a very small catch of salmon, a fair one of lobsters, but fish very small; a good take of smelts, but smaller than formerly.

Overseer J. Noble reports a falling off in most kinds of fish in his district, except oysters.

Overseer J. G. Williston reports salmon fishing very poor, not much over half that of last year. Fishermen attribute this to continuous southerly winds. A very heavy run went up the main river this fall, but owing to low freshets very few salmon went up the small streams. Smelts are holding their own wonderfully well, and in his opinion, if present regulations are not altered, it will be all right; but the spring fishing is injurious. He reports a large catch of oysters, and suggests a tax of about

$1. on each rake or tongs, to enable fishery officers to have better control of this very valuable fishery.

Overseer W. Wyse reports a smaller catch of salmon, and no material change in other kinds of fish in his district.

Overseer J. Hogan reports a very small catch of Salmon, owing partly to an early spring, and the first run entering the river before the fishermen thought of putting out their nets and urges increased protection in this connection. He says that, notwithstanding, all his efforts, the spring run was largely interfered with by poachers, there being no guardians on until the middle of September, and this would seem to imply that a smaller quantity of ova was deposited than usual, as fewer grilse were observed than in formeryears. If restrictive and protective measures are not made to keep pace with the legal and illegal methods of destruction, this fishery must soon be one of the past. Moreover, to silence adverse popular criticism respecting the manner in which fry are transported and deposited in June, this officer suggests that the inspector be authorized to superintend the work, in order that more frequent renewals of water be made and more attention given to the temperature of that the water. The quantity of bass taken was about the same as last year, but the average weight greater, pointing to a scarcity of young fish, a fact well explained by the unprecedented destruction of bass fry four or five years ago, as well as by the continual drain made on them since by the smelt bag-nets. It is to be hoped that this important industry will be revived through the wholesome provisions lately put in force by the Department.

Overseer Thos. Parker reports a poor run of salmon during the early part of the season, but a good one in the fall. He urgues increased protection.

KENT COUNTY.

Overseer L. Guimond reports a large increase in the catch of salmon. Mackerel, herring, cod, hake, and eels were about the same as last year There a falling off in smelts, owing to soft weather during the month of December. Oysters are being entirely ruined by winter raking and this overseer strongly urges its prohibition. Lobsters are about the same as last year. Salmon were plentiful in Kouchbouquac River this fall, but they could not get up to the spawning grounds for want of fish-ways.

Overseer W. F. Hannah reports very little change in this season's fishing from last year's. There is an improvment in the salmon and lobster fisheries, but trout, bass, eels, &c., are about the same. The regulations were well observed.

Overseer M. A. Girouard reports the catch of herrings, alewives, cod, hake and flounders as having been below that of last year, but mackerel, trout, smelts, eels, oysters and lobsters were caught in larger quantities, and as prices were good, fishermen are well satisfied.

Overseer C. Cormier says that the catch of herring was good; that of mackerel small, though something better than last year; lobsters more plentiful, and packers did very well, and appear satisfied with the close season. The oysters are still on the decline, and it cannot be otherwise so, as long as they are fished in winter. The catch of smelt was better than last year's. The other kinds of fish about the same. The close seasons were generally well observed, with the exception of two parties who were fined for having lobsters in possession under the legal size. There is only one fishway in this district, on Cocagne River, and it was kept open during the season.

Overseer A. T. LeBlanc reports the close season for trout as having been well observed. The proximity of Canaan River to Moncton, and its easy access by rail, makes it a desirable place for sport.

WESTMORELAND COUNTY.

Overseer W. B. Deacon reports that fifteen lobster factories were operated in his district, being two more than last year. More factories are being built for next year's operations, last season having been a remarkably favorable one for the packers, and a fair pack was made of 188,784 pounds more than in 1888. The

mackerel fishery was a total failure, and it is no wonder, while the food fishes are being slaughtered as they are. The catch of smelt is large, as compared with last year, but small when compared with 1887. The fish were very small, a good fair-sized smelt being seldom caught now. Fair quantities of other fish were taken. Complaints came to this office, last summer, about people putting nets across streams to catch trout. He paid but little attention to them, as he wanted to keep expense down, and the parties would not furnish evidence to convict.

Overseer R. Goodwin reports the whole yield of his division as a little in excess of last year's, not that the catch was better, but prices on the whole ranged high. The river fisheries were pretty good, especially the alewives, which have not been so plentiful for the past twenty years. Large numbers were taken, and they were of excellent quality. Trout and smelts are plentiful, and some good catches were made. The shad fishermen of Sackville, &c., want a close time made from 15th June to 1st July all over the Province, to prevent the destruction of this fish during the spawning season. The several close seasons were well observed. The abuses arising from sawdust are becoming less every year. There are no fish-ways at present on any of our streams, the last one, on Tidnish River, having been carried away by a freshet two years ago. This officer recommends that fish-ways be put in Port Elgin and Tidnish river as soon as practicable.

Overseer D. T. Cormier reports the catch of shad and salmon as being larger than last year, and urges a close season to 1st July to prevent the wholesale destruction of fish before spawning time.

I have the honor to be, Sir,
Your obedient servant,

R. A. CHAPMAN,
Inspector of Fisheries for District No. 2.

DISTRICT No. 3.

REPORT ON THE FISHERIES OF DISTRICT No. 3, COMPRISING THE COUNTIES OF VICTORIA, CARLETON, YORK, SUNBURY, QUEEN'S KING'S, ST. JOHN AND ALBERT, FOR THE YEAR 1889, BY INSECTOR DAVID MORROW.

Hon. Charles H. Tupper,
Minister of Marine and Fisheries.

Oromocto, 31st December, 1889.

Sir,—I have the honor to submit herewith the first annual report of the fisheries of District No. 3, New Brunswick, for the year 1889, with condensed reports from local officers. Appended to these are returns of the catch of the several districts in each county, and in the whole district, with comparative statements of Albert and St. John counties for each year since 1885; also, a comparative statement of the catch in the district for the last five years. By these returns it will be seen that there has been an aggregate falling off in the total value of the catch during the past year of $114,622.50, as compared with the previous year, the total value in 1888, having been $290,707.50, and for 1889, $176,085.

SALMON.

The returns show a falling off of about 20,000 pounds. If net fishing in non-tidal waters had not been prohibited there is no doubt but the catch of this fish would have been considerably increased over that of last year. Over-fishing is causing a steady decline in this fishery. At St. John, in the harbor below the falls, and in the bay, salmon fishing is pursued by about 100 boats, with over 70,000 fathoms, or 80 miles of nets. How any fish can escape is a wonder. Should salmon continue to

decrease, it might be advisable to prohibit the catch of these fish for one to three years, giving the fishermen a year's notice, and stock the streams and rivers with young fish by artificial culture.

BASS.

This fish shows a decrease of nearly 60,000 pounds. The principal bass fishery is in Belle Isle Bay, King's County, and the fish are caught only in a small part of this water. It is probable that they are over-fished.

SHAD.

The returns show a slight improvement in this fishery as compared with last year. Comparative statements for the last years go to show that they are steadily decreasing in this district. The returns for Albert County indicate that these fish must have abandoned the head of the Bay of Fundy. In 1889 the returns give 25 barrels; in 1888 the catch amounted to 30 barrels; in 1885 the take was 3,900 barrels. It is therefore unreasonable to suppose that over-fishing could have so effectually destroyed this valuable fishery at the head of the Bay.

ALEWIVES.

These fish show a decrease of 745 barrels, as compared with last year's catch. The close time from Friday night to Monday morning must have a benefical effect on this fishery, and the regulation should be strictly enforced.

TROUT.

All the lakes and streams of this district abound in trout. Few are caught for market. The regulations extending the close time to the 1st of May will prevent fishing through the ice when the fish are in poor condition. As fishing is confined to angling, no great danger of exhaustion exists.

PICKEREL AND PERCH.

Pickerel are still increasing in the St. John River and tributaries. They prefer lakes, ponds and dead water streams with soft mud bottoms. The catch of perch is not equal to that of last year. Both these fish are plentiful in the waters of Sunbury and Queen's counties. I would recommend a close time of three months, to cover the spawning season.

COD, POLLOCK, HAKE AND HADDOCK.

The returns of these fish show a small increase over the catch of last year.

HERRING.

The yield is very much below that of last year, and the prices lower. This accounts in part for the small catch.

Large numbers of spawned herring were taken on the Nova Scotia side of the bay, and sold cheap to fish dealers. If allowed to continue, this practice will be the means of driving good herring out of our market.

LOBSTERS.

The returns show a falling off from last year. The catch of 1889 is a little more than one-fourth that of 1887. Overseer O'Brien, of St. John, says that "lobsters are being over-fished. There is one continuous line of traps from Point Lepreau to Split Rock and from Black Rock to Quaco." The rapid falling off in the product of this fishery, in both size and numbers, demands investigation and attention. Should the diminution continue in the future as in the past, this industry must soon become extinct. At present, there appears to be no possible remedy, beyond that of restricting the catch for a greater or less period of time. The most simple regulation would be one absolutely prohibiting for a certain time the capture of lobsters.

SYNOPSES OF FISHERY OVERSEERS' REPORTS.

ALBERT COUNTY.

Overseer Stewart reports the total value of the catch for this county at only $620. He says that salmon were late coming into the fresh waters, owing to the lowness of the streams, but that they reached here in large numbers. On the whole, they were well protected against poachers. The fish-ways were kept open and in repair, and fish were constantly passing to and fro through them. This officer recommends that tightbrush weirs, such as are used along our shores, be prohibited, as they destroy the young fish.

CARLETON COUNTY.

Overseer Lindsay, whose district includes that part of the Main South-West Miramichi River, in this county, reports that gaspereaux arrived in immense numbers in May, and after leaving the Main South-West, twelve miles below the Forks, entered Lake Brook, and passed up to the lake called after their name, to spawn. Next to arrive are the sea trout. They reached the head of the river during the first days of June; and, though found in every part of the waters, Bedell Brook, a large tributary of the North Branch, is their favorite stream. Last of all come the salmon, during the latter part of June. The river kept exceptionally low for the greater part of the season, but just at the beginning of the close season heavy rains fell, and continued falling in such quantity, and the water was so high, that illegal fishing was impossible. No rubbish is placed in the water. The catch is about the same as in other years, and the fish are increasing. Sportsmen from all parts of the Province and the United States frequent these waters.

Overseer Burtt reports the run of salmon about the same as usual, but the number taken much less, owing to the enforcement of the regulation prohibiting net-fishing in fresh waters. The run of shad was about the same, and the quantity taken also. The abolition of net fishing in fresh waters will tend to increase illegal fishing unless the streams are closely guarded. To more effectually prevent the spearing of salmon on this river, it will be necessary to have assistance.

YORK COUNTY.

Overseer Orr reports that the use of nets being confined to tidal waters, there is quite a falling off in the catch of salmon in his division. On the St. John River there are only about ten miles where nets can be used. In that distance the catch was good. This officer had some trouble in enforcing the law as to nets in non-tidal waters. Salmon were killed on the South-West Miramichi, in a pool at Rocky Brook, with dynamite. Ninety-eight salmon were killed with one charge, besides a large number of small fish. Sportsmen on the South-West Miramichi report the sport as fine, considering the low state of the water during the angling season. Salmon were very abundant in the river and larger than usual. Mr. Orr seized one from a poacher that would weigh upwards of 50 pounds. During the last part of October and in November salmon were numerous on the spawning grounds. The water had risen and the fish were not molested.

Warden Glendenning reports a decrease in the catch of trout, caused by the erection of mill-dams and the deposit of sawdust and waste lumber. The close time was strictly observed. This officer recommends the building of fish-ways in each of the three mill-dams on the north-east branch of the Magaguadavic stream, and that the mill owners be compelled to discontinue the throwing of sawdust and waste lumber in the stream.

Warden Cronkhite reports that after receiving orders that it was illegal to use nets for the capture of salmon in non-tidal waters he notified the fishermen. There are about thirty of them in this district. Some of them stopped willingly; others were very reluctant to do so. In carrying out the law, stringent measures had to be used to sustain it. If the present regulations are strictly carried out this will very much increase the number of salmon. This officer suggests prohibiting net-fishing for salmon from the mouth of the St. John River to Grand Falls, during three or four years.

SUNBURY COUNTY.

Overseer Hoben reports nearly all kinds of fish on the increase, particularly shad, gaspereaux and pickerel. The close seasons were fairly observed—as well as could be, under the old regulations. He suggests that a bounty be paid per barrel to all persons engaged fishing eels, on account of these fish damaging nets and destroying other kinds of fish. It is also his opinion that the time has arrived when a very vigilant observance of the fishery laws and regulations should be put in force by fishery officers in each district, and he recommends that the law against allowing mill owners putting sawdust in the rivers or any other place where fish are caught in this Province be strictly enforced.

QUEEN'S COUNTY.

Overseer Hetherington reports shad as being plentiful. Alewives are nearly always abundant, but the people do not prosecute this fishery to any extent. Pickerel are as abundant as ever. They cannot increase unless some restrictions are enacted. This officer recommends that no nets be used to take them having a smaller mesh than $2\frac{7}{8}$ inches, it being proved that as many pounds of fish can be taken in a net of that size, as in one of $2\frac{1}{2}$-inch mesh, and not kill more than half the number of fish, leaving the rest to grow. He also suggests that something be done by way of artificial hatching of shad, and this at once, before the present stock is exhausted. The fishery laws were tolerably well observed.

KING'S COUNTY.

Overseer Gosline reports that the unusual dry spring and summer left the water low, and that, in consequence, only a few salmon reached the spawning grounds, unusually late in the season. Shad were very numerous in the Kennebeccasis, and more than the ordinary number were taken. This officer urges the necessity of enforcing the law in reference to sawdust and mill rubbish, and says that it is impossible for fish to increase in water that is turbid with buckwheat hulls and sawdust. Farmers living below the mills are constantly complaining of damages done in their meadows by sawdust and mill rubbish.

ST. JOHN COUNTY.

Overseer O'Brien reports 72 boats fishing for salmon in the bay. Each boat fishes from 800 to 1,000 fathoms of net. They fish from Cape Spencer to the Wolves, or about 35 miles below Partridge Island, and from one to ten miles off shore. It is almost impossible for a salmon to get into the harbor, the schools being scattered and broken. In the harbor they are met with 30 boats, and from 200 to 300 fathoms of net to each boat drifting between the falls and Partridge Island, so that there cannot be any mystery as to the decrease of this fish. Gaspereaux continue to fall off. This is greatly caused by the destruction of young fish in weirs and seines. This officer is pleased to see the Department prohibiting seining for alewives and shad, a step in the right direction. Spring shad is about the same as last year, but the fall shad have nearly disappeared from our waters. This is caused by sawdust being allowed to run from the mills at the upper end of the bay, and cover the flats and bottoms of the bays where shad formerly went to feed and were caught in large numbers.

Overseer Rourke, of St. Martin's District, reports the catch of herring as small—far below that of last season. The lobster catch is a mere cipher, only one man being engaged in this branch of the fishery for a short time. The catch at Tynemouth Creek is nothing to former years. This officer had no infringements to report. The regulations were well observed.

I have the honor to be, Sir,
Your obedient servant,
DAVID MORROW,
Inspector of Fisheries, District No. 3, New Brunswick.

NEW BRUNSWICK—District No. 1.

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries, Quantity and Value of Fishing Material, Kinds and Quantities of Fish, and the Total Number of Men Employed, &c., in District No. 1, of the **Province of New Brunswick**, for the Year, 1889.

No.	Districts.	Vessels and Boats Employed in Fishing.							Fishing Material.						Kinds of Fish.							
		Vessels.				Boats.			Nets.		Weirs.		Lobster Traps.									
		No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	No.	Value.	No.	Value.	Salmon, fresh, in ice, lbs.	Mackerel, barrels.	Herrings, barrels.	Herrings, frozen, per 100.	Herrings, smoked, in boxes.	Alewives, barrels.	Cod, cwt.	Cod Tongues and Sounds, barrels.
	Charlotte Co.			$			$			$		$		$								
1	West Isles	12	218	6500	48	260	17800	260	12000	6000	68	34000	2000	1000	150	....	2500	2000000	75000		600	....
2	Ste. Croix	...	.....	.....	....	....	.....	....	.....	.....	8	1600	.. ..	.....	....	...	25	.....	1700	100	.....	....
3	Magaguadavic	...	.....	.....	....	....	.....	....	.....	.....	...	.....	.....	.....	....	...	.....	.....	.....	...	.....	....
4	Passamaquoddy	3	40	1500	11	70	1750	100	3000	1500	51	22950	1223	1223	....	....	.....	2700000	2500	....	125	...
5	Beaver Harbor	21	250	10000	100	100	2500	250	18300	15250	47	4700	3700	3700	....	....	1800	5500000	69000	....	1000	....
6	Grand Manan	14	293	14000	50	450	40000	593	20000	10000	36	36000	8000	8000	....	10	10000	5000000	1500000	....	12000	10
7	Campo-Bello	24	516	10478	101	114	52811	166	8323	6075	24	1580	998	572	....	....	1684	1547860	950900	....	1288	....
	Total	74	1317	42478	310	994	114861	1369	61623	38825	234	100830	15921	14495	150	10	16009	21747860	2599100	100	15013	10

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries, Quantity and Value of Fishing Material, &c., District No. 1 of **New Brunswick**—*Concluded.*

No.	KINDS OF FISH.														FISH PRODUCTS.				VALUE.
	Pollock, cwt.	Hake, cwt.	Hake, Sounds, lbs.	Haddock, cwt.	Halibut, lbs.	Trout, lbs.	Frost fish, lbs.	Squid, barrels.	Flounders, lbs.	Smelt, lbs.	Pickerel, lbs.	Sardines, hds.	Lobsters, tons.	Lobsters, cans.	Fish Oil, gallons.	Fish Guano, tons.	Fish used as bait, barrels.	Fish used as manure, barrels.	$ cts.
1	6000	1700	2200	300	500	.....	.....	.....	.....	.....	.....	10000	75	.....	11400	10	200	600	115,090 00
2	.....	.....	.....	.....	.....	3000	1000	.....	.....	3500	1000	400	.....	.....	.....	.....	.....	.....	2,785 00
3	.....	.....	.....	.....	.....	5000	.....	.....	.....	2000	.....	.....	.....	.....	.....	.....	.....	.....	620 00
4	170	.....	.....	230	900	5000	.....	.....	20000	.....	.....	2140	77	.....	700	53	75	2500	33,212 50
5	6200	4500	4500	1000	.....	.....	.....	.....	2000	.....	.....	4000	172	.....	9000	160	15000	1000	160,710 00
6	5000	17000	17000	1000	40000	.....	2500	60	3000	.....	.....	1500	300	.....	40000	.....	2000	6000	642,390 00
7	3000	2216	3940	1877	.....	.....	.....	159	.....	.....	.....	115	61	48000	1119	.....	985	207	331,781 76
	20370	25416	27640	4407	41400	13000	3500	219	25000	5500	1000	18145	685	48000	62219	223	18260	10307	

Clams, 2,000 barrels	$	12,000
Home Consumption not included above		75,000
		87,000 00
		1,373,589 26

RECAPITULATION

SHOWING Yield and Value of the different Fisheries, in District No. 1, of **New Brunswick** for the Year 1889.

Kinds of Fish.		Quantities.	Rate.	Value.
			$ cts.	$ cts.
Salmon, fresh, in ice	Lbs.	150	0 20	30 00
Mackerel	Brls.	10	15 00	150 00
Herring	"	16,009	4 00	64,036 00
do frozen	No.	21,747,860	p. 100 0 60	130,487 16
do smoked	Boxes	2,599,100	0 25	649,775 00
Alewives	Brls.	100	4 50	450 00
Cod	Cwt.	15,013	4 00	60,052 00
Cod Tongues and Sounds	Brls.	10	10 00	100 00
Pollock	Cwt.	20,370	4 00	81,480 00
Hake	"	25,416	4 00	101,664 00
Hake Sounds	Lbs.	27,640	1 00	27,640 00
Haddock	Cwt.	4,407	4 00	17,628 00
Halibut	Lbs.	41,400	0 10	4,140 00
Lobsters	Cans.	48,000	0 12	5,760 00
do	Tons.	685	30 00	20,550 00
Trout	Lbs.	13,000	0 10	1,300 00
Frost Fish	"	3,500	0 04	140 00
Squid	Brls.	219	4 00	876 00
Flounders	Lbs.	25,000	0 10	2,500 00
Smelt	"	5,500	0 06	330 00
Pickerel	"	1,000	0 06	60 00
Sardines	Hhds.	18,145	3 00	54,435 00
Clams	Brls.	2,000	6 00	12,000 00
Fish Oil	Galls.	62,219	0 40	24,887 60
do Guano	Tons.	223	25 00	5,575 00
do used as bait	Brls.	18,260	1 50	27,390 00
do do manure	"	10,307	0 50	5,153 50
do for local consumption, not in returns of districts	"	18,750	4 00	75,000 00
Total, 1889				1,373,589 26
do 1888				1,173,449 50
Increase				200,139 76

NUMBER and Value of Vessels, Boats, Nets, Weirs, Traps, &c., engaged in the Fisheries of District No. 1 of **New Brunswick** for the Year 1889.

Material.	Value.	Total.
	$ cts.	$ cts.
74 vessels (aggregate tonnage, 1,317)	42,478 00	
994 boats	114,861 00	
61,623 fathoms of nets	38,825 00	
234 weirs	100,830 00	
15,921 lobster traps	14,495 00	
smelt nets		
801 trawls	18,820 00	
		330,309 00
1 lobster factory	3,500 00	
2 sardine factories	6,500 00	
549 smoke houses	219,400 00	
78 oil presses with fixtures	3,850 00	
503 fish houses	179,570 00	
		412,820 00
Total		743,129 00

NEW BRUNSWICK—District No. 2.

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries, Quantity and Value of Fishing Material, Kinds and Quantities of Fish, and the Total Number of Men Employed, &c., in District No. 2, of the Province of **New Brunswick,** for the Year 1889.

DISTRICTS.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.							KINDS OF FISH.										
	Vessels.				Boats.			Nets.		Weirs.		Smelt Nets.		Lobster Traps.												
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	No.	Value.	No.	Value.	No.	Value.	Salmon, brls.	Salmon, fresh, in ice, lbs.	Salmon, smoked, lbs.	Salmon, in cans, lbs.	Mackerel, brls.	Mackerel, in cans.	Herrings, brls.	Herrings, smoked, in boxes.	Alewives, brls.	Cod, cwt.	Cod Tongues and Sounds, brls.
Restigouche County.			$			$			$		$		$		$											
Dalhousie to Head Tide.	..	....	.....	....	35	358	35	8100	1000	..	....	.....	.....	.....	.....	..	71200	....	....	....	... ..	.....	....	....	.....	....
Dalhousie to Belledune.	..	....	.....	....	80	800	100	20000	6000	..	....	5	100	2500	1250	..	124400	....	5000	....	....	100	....	....	40	....
Totals.....	..	....	.....	....	115	1158	135	28100	7000	..	....	5	100	2500	1250	..	195600	....	5000	....	.....	100	....	....	40	....
Gloucester County.																										
Petit Rocher	..	....	.....	....	350	1500	700	10000	8000	..	....	....	.....	.....	.....	..	70000	....	....	15	16000	5012	....	....	1200	....
Bathurst.....	..	....	.....	....	100	2000	200	7500	6000	..	....	7	212	.....	.....	..	130000	....	....	100	.....	900	....	....	200	....
New Bandon.....	..	....	.....	....	100	2000	200	5000	4300	..	....	...	.....	4000	4000	..	150000	....	....	150	.....	2000	....	....	3500	....
Grand Anse.....	2	40	600	6	100	4000	300	3500	1200	1	500	....	.....	3750	3750	..	38000	....	....	200	2000	200	....	200	2600	8
Upper Caraquet.....	7	82	2300	27	137	3800	411	6080	26125	..	....	....	.....	.....	.....	..	.....	....	....	51	.....	8000	....	....	33000	....
Lower Caraquet.....	4	48	1700	12	142	13700	426	5660	6500	..	....	29	1160	1200	1200	..	.....	....	....	25	.....	2800	....	....	33000	....
Shippegan.....	20	246	8500	68	243	22500	549	10700	7400	..	....	50	1500	12100	12000	..	11380	....	....	35	3700	1540	....	....	14000	....
Miscou Island	2	27	1000	7	35	5950	133	840	420	..	....	28	728	7000	6300	..	.....	....	3160	17	3360	200	....	....	2000	....
Pokemouche.....	..	....	.....	....	149	3980	258	13820	6500	..	....	70	2000	.....	.....	..	10000	....	....	40	.....	2330	50	400	600	....
Tracadie.....	5	58	1500	19	7	650	22	27000	1350	..	....	101	1200	1600	1600	..	9780	....	580	....	3500	1850	....	250	900	2
Totals.....	40	501	15600	139	1363	60080	3199	90100	67795	1	500	285	6800	29650	28850	..	419160	....	3740	633	28560	24832	50	850	91000	10

NEW BRUNSWICK—District No. 2—*Continued.*

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries, Quantity and Value of Fishing Material, &c.—*Continued.*

DISTRICTS.	KINDS OF FISH—*Concluded.*																FISH PRODUCTS.				VALUE.
	Hake, cwt.	Hake Sounds, lbs.	Haddock, cwt.	Halibut, lbs.	Shad, brls.	Bass, lbs.	Trout, lbs.	Frost fish, lbs.	Squid, brls.	Flounders, lbs.	Smelt, lbs.	Perch, lbs.	Eels, brls.	Oysters, brls.	Lobsters, tons.	Lobsters, cans.	Fish Oil, galls.	Fish Guano, tons.	Fish used as bait, brls.	Fish used as manure, brls.	
Restigouche County.																					$ cts.
Dalhousie to Head Tide.	....	.....	....	....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	14,240 00
Dalhousie to Belledune	....	.....	....	....	...	.....	500	.....	.....	.....	7000	.....	...	.....	4	46300	.....	....	300	.....	32,786 00
Totals	....	....	..	....	...	....	500	....	....	.....	7000	.....	...	.....	4	46300	.....	...	300	.....	47,026 00
Gloucester County.																					
Petit Rocher	....	.....	....	....	....	.....	.....	.....	.....	...	4000	.....	...	.....	.....	56641	.....	....	1200	4000	51,829 92
Bathurst	....	...	....	....	....	...	2000	...	....	.....	300000	.....	...	...	.....	.....	.....	....	.....	.....	50,100 00
New Bandon	....	.....	....	....	....	.....	.....	.....	.....	.....	.....	.....	...	.....	.....	100000	.....	....	700	.....	67,300 00
Grand Anse	.....	.....	.....	.....	.....	.....	.....	.....	20	.....	.....	.....	...	.....	.....	88000	2600	....	1000	400	36,400 00
Upper Caraquet	140	840	100	800	....	.....	1000	.....	20	.....	.....	.....	10	.....	.....	.....	3000	....	4500	500	175,125 00
Lower Caraquet	500	.....	100	200	....	.....	500	.....	.....	.....	36024	.....	10	3900	....	50400	23900	....	1500	500	178,114 44
Shippegan	1200	2700	730	....	....	.....	.....	.....	.....	.....	69290	....	..	.....	.....	147300	9200	....	3500	5200	109,188 90
Miscou Island	25	.....	.....	....	....	.....	.....	.....	.....	.....	59580	.....	...	.....	.....	22232	1000	....	600	500	17,824 84
Pokemouche	....	.....	....	....	5	300	2000	.....	.....	.....	22500	.....	50	.....	.....	.....	120	....	.....	.....	18,298 00
Tracadie	250	1½	70	....	....	.....	650	.....	....	...	121200	.....	24	.....	16	3200	120	....	.....	...	24,378 50
Totals	2115	3541½	1000	1000	5	300	6150	.....	40	.....	612594	.....	94	3900	16	467773	39940	...	13000	11100	728,559 60

NEW BRUNSWICK—District No. 2—*Continued.*

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries, Quantity and Value of Fishing Material, &c.—*Continued.*

DISTRICTS.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.								KINDS OF FISH.											
	Vessels.				Boats.			Nets.		Weirs.		Smelt Nets.		Lobster Traps.													
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	No.	Value.	No.	Value.	No.	Value.	Salmon, brls.	Salmon, fresh, in ice, lbs.	Salmon, smoked, lbs.	Salmon, in cans, lbs.	Mackerel, brls.	Mackerel, in cans.	Herrings, brls.	Herrings, smoked, in boxes.	Alewives, brls.	Cod, cwt.	Cod Tongues and Sounds, brls.
Northumberland County			$			$			$		$		$		$												
Neguac to Portage Isl'd	..	....	.....	....	100	2100	115	11234	3360	..	....	22	880	.....	.....	..	61764	....	....	70	.....	2400	....	....	500	....
Tabusintac	..	....	.....	....	5	150	10	364	250	..	....	122	2060	1000	1000	..	400	....	....	.....	.....	213	....	230	.....	....
Escuminac	..	....	.....	....	42	840	60	4450	4000	..	....	50	1500	8000	8000	..	41330	....	100	100	.....	.....	....	80	500	....
Bay du Vin	2	95	4000	10	150	3000	400	12000	3600	..	....	124	2480	.....	.....	..	21880	....	....	....	.....	300	....	250	.....	....
Chatham	10	300	15000	40	105	1525	105	9000	4500	..	....	350	10800	.....	.....	..	64380	200	....	100	.....	.....	....	1000	.....	....
Newcastle & North Esk.	..	....	.....	....	....	.....	....	1615	2300	..	....	38	950	.....	....	..	44577	....	....	....	.....	.....	....	200	.....	....
Derby, &c	..	....	....	....	....	....	....	2080	624	..	....	....	.....	.....	.....	30	30010	1600	....	....	.....	.....	....	520	.....	....
Totals	12	395	19000	50	402	7615	690	40743	18634	..	....	706	18670	9000	9000	30	264341	1800	100	270	.....	2913	....	2280	1000	....
Kent County.																										
Eel River to Kouchibouguacis	..	....	.....	....	180	6000	500	10000	7000	..	....	100	3600	11000	11000	..	30000	....	....	75	5000	3000	....	225	200	...
Thence to Chockfish Riv.	9	144	4320	54	288	8640	576	20400	6120	..	....	188	5640	6290	6290	..	12000	....	400	621	.....	3024	....	940	1500	....
Richibucto River and Branches	..	....	.....	....	7	140	14	1800	700	..	....	47	1100	.....	.....	..	.....	....	....	.....	.....	.....	....	780	.....	....
Buctouche River & Bay	..	....	.....	....	122	2838	244	6860	2340	..	....	127	4550	2225	2225	..	.....	....	....	103	624	830	....	125	105	....
Cocagne River and Bay	..	....	.....	....	280	5600	560	17000	8500	..	....	38	760	2946	2946	..	.....	....	....	25	.....	2500	....	65	25	....
Canaan River	..	....	.....	....	9	20	4	.....	.....	..	....	....	.....	.....	.....	..	.....	....	....	.....	.....	.....	....	.....	.....	....
Totals	9	144	4320	54	886	23238	1898	56060	24660	..	...	500	15650	22461	22461	..	42000	....	400	824	5624	9354	....	2135	1830	....

NEW BRUNSWICK—District No. 2—*Continued.*

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries, Quantity and Value of Fishing Material, &c.—*Continued.*

DISTRICTS.	KINDS OF FISH—*Concluded.*																FISH PRODUCTS.				VALUE.
	Hake, cwt.	Hake Sounds, lbs.	Haddock, cwt.	Halibut, lbs.	Shad, brls.	Bass, lbs.	Trout, lbs.	Frost fish, lbs.	Squid, brls.	Flounders, lbs.	Smelt, lbs.	Perch, lbs.	Eels, brls.	Oysters, brls.	Lobsters, tons.	Lobsters, cans.	Fish Oil, galls.	Fish Guano, tons.	Fish used as bait, brls.	Fish used as manure, brls.	
Northumberland County.																					$ cts.
Neguac to Portage Isl'nd	200	200	..	600	....	10346	400	.....	....	800	69224	.....	40	90	.....	.....	400	....	.....	800	32,187 00
Tabusintac	....	.....	....	....	..	.....	1000	.....	....	.....	429600	.....	90	100	.....	18780	.....	....	300	.....	31,746 60
Escuminac	250	.....	....	....	....	.....	.....	.....	....	1000	104000	.....	....	3000	.....	165000	.....	....	1600	.....	50,681 00
Bay du Vin	....	.....	....	....	10	.....	.....	70000	....	40000	215422	.....	20	8500	.....	.....	.....	....	.....	600	52,526 32
Chatham	....	.....	....	....	10	1000	500	120000	....	6000	700000	.....	500	500	.....	.....	.....	....	.....	2000	74,026 00
Newcastle & North Esk.	....	.....	....	....	1	4000	300	.....	....	.....	73924	.....	22	.....	.....	.....	.....	....	.....	.....	14,750 84
Derby, &c.	....	.....	....	....	....	.....	750	.....	....	.....	.....	.....	....	.....	.....	.....	.....	....	.....	....	9,217 00
Totals	450	200	....	600	21	15346	2950	190000	....	47800	1,592,170	.....	672	12190	.....	183780	400	....	1900	3400	265,134 76
Kent County.																					
Eel River to Kouchibouguacis	700	700	....	....	5	600	.....	.....	....	2000	138409	10000	125	300	.....	196000	300	100	3000	.. ..	66,718 04
Thence to Chockfish Riv.	2500	4900	....	4500	14	1800	1480	.....	....	3500	520000	.....	94	320	. ....	192000	480	....	2400	.....	110,129 00
Richibucto River and Branches	....	.....	....	....	....	780	.....	.....	....	.....	109000	.....	75	210	.....	.....	.....	....	.....	.....	11,476 80
Buctouche River & Bay.	100	180	....	....	....	.....	3400	2500	....	4000	583900	.....	53	725	.....	69360	205	....	1125	.....	55,174 08
Cocagne River and Bay.	100	.....	100	60	....	180	250	5500	....	.....	118880	.....	45	65	.....	140688	180	....	1500	.....	38,811 66
Canaan River	....	.....	....	....	....	.....	4000	.....	....	.....	.....	.....	5	.....	.....	.....	.....	....	.....	.....	450 00
Totals	3400	5780	100	4560	19	3360	9130	8000	....	9500	1,470,189	10000	397	1620	.....	598048	1165	100	8025	.....	282,759 58

NEW BRUNSWICK—District No. 2—*Continued.*

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries, Quantity and Value of Fishing Material, &c.—*Continued.*

DISTRICTS.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.								KINDS OF FISH.											
	Vessels.				Boats.			Nets.		Weirs.		Smelt Nets.		Lobster Traps.													
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	No.	Value.	No.	Value.	No.	Value.	Salmon, brls.	Salmon, fresh, in ice, lbs.	Salmon, smoked, lbs.	Salmon, in cans, lbs.	Mackerel, brls.	Mackerel, in cans.	Herrings, brls.	Herrings, smoked, in boxes.	Alewives, brls.	Cod, cwt.	Cod Tongues and Sounds, brls.
Westmoreland County.			$			$			$		$		$		$												
Shediac and Botsford	..	....	.....	....	600	9000	1200	10000	10000	..	....	150	3000	10000	8000	..	400	....	....	400	500	12000	2000	....	20	....
Bay Verte to Sackville	..	....	.....	....	28	1050	56	4900	1300	..	....	24	580	54	54	..	2160	....	....	10	.....	3000	750	....	.....	....
Dover and Gautreau	..	....	.....	....	22	1100	44	5500	1100	..	....	...	.....	.....	.....	..	6108	....	....	....	.....	.....	.....	....	.....	....
Pré d'en Haut and Belliveau	..	....	.....	....	15	770	30	3750	750	..	....	...	....	.....	.....	..	3440	....	....	....	.....	.....	.....	....	.....	....
Dorchester Cape	..	....	.....	....	....	....	5	1000	100	..	....	...	.....	...	.....	..	100	....	....	....	.....	....	....	....	.....	....
Woodpoint	..	....	.....	....	8	480	16	2000	400	..	....	....	.....	.....	.....	..	1280	....	....	....	.....	....	....	....	.....	....
Totals	..	....	.....	....	673	12400	1351	27150	13650	..	....	174	3580	10054	8054	..	13488	....	....	410	500	15000	2750	....	20	....
Grand Totals for District No. 2	61	1040	38920	243	3439	104491	7273	242153	131739	1	500	1670	44800	73665	69615	30	934589	1800	9240	2137	34684	52199	2800	5265	93890	10

NEW BRUNSWICK—District No. 2—*Continued.*

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries, Quantity and Value of Fishing Material, &c.—*Concluded.*

DISTRICTS.	KINDS OF FISH—*Concluded.*																FISH PRODUCTS.				VALUE.
	Hake, cwt.	Hake Sounds, lbs.	Haddock, cwt.	Halibut, lbs.	Shad, brls.	Bass, lbs.	Trout, lbs.	Frost fish, lbs.	Squid, brls.	Flounders, lbs.	Smelt, lbs.	Perch, lbs.	Eels, brls.	Oysters, brls.	Lobsters, tons.	Lobsters, cans.	Fish Oil, galls.	Fish Guano, tons.	Fish used as bait, brls.	Fish used as manure, brls.	
Westmoreland County.																					$ cts.
Shediac and Botsford	....	.....	....	....	....	1000	1000	8000	30	2000	216050	. . .	150	50	200	456672	. .....	....	2600	4000	136,833 64
Bay Verte to Sackville	....	.....	....	....	350	200	1000	5000	....	.....	57435	.....	12	.....	30	.....	.....	....	600	400	22,147 60
Dover and Gautreau	....	.....	....	....	440	....	.....	.....	....	...	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	5,621 60
Pré d'en Haut and Belliveau	....	.....	....	...	280	....	.....	.....	....	.....	.....	.....	....	.....	.....	.....	.....	...	.....	.....	3,488 00
Dorchester Cape	....	.....	....	....	20	....	.....	.....	....	.....	.....	.....	....	.....	.....	.....	.....	....	.....	.....	220 00
Woodpoint	....	.....	....	....	120	.....	.....	.....	....	.....	.....	.....	....	.....	.....	.....	.....	....	.....	.....	1,456 00
Totals	....	.....	....	....	1210	1200	2000	13000	30	2000	273485	.....	162	50	230	456672	.....	....	3200	4400	169,766 84
Grand Totals for District No. 2	5965	9521½	1100	6160	1255	20206	20730	211000	70	59300	3,955,438	10000	1325	17760	250	1,752,573	41505	100	26425	18900	1,493,246 78

RECAPITULATION of the Yield and Value of the Fisheries in District No. 2, **New Brunswick.**

Kinds of Fish,		Quantity.	Price.	Value.
			$ cts.	$ cts.
Salmon	Brls.	30	16 00	480 00
do fresh	Lbs.	934,589	0 20	186,917 80
do smoked	"	1,800	0 20	360 00
do in cans	"	9,240	0 15	1,386 00
Mackerel	Brls.	2,137	15 00	32,055 00
do in cans	Lbs.	34,684	0 12	4,162 08
Herrings	Brls.	52,199	4 00	208,796 00
do smoked	Boxes.	2,800	0 25	700 00
Alewives	Brls.	5,265	4 50	23,692 50
Cod	Cwt.	93,890	4 00	375,560 00
Cod Tongues and Sounds	Brls.	10	10 00	100 00
Hake	Cwt.	5,965	4 00	23,860 00
Hake Sounds	Lbs.	9,521½	1 00	9,521 50
Haddock	Cwt.	1,100	4 00	4,400 00
Halibut	Lbs.	6,160	0 10	616 00
Shad	Brls.	1,255	10 00	12,550 00
Bass	Lbs.	20,206	0 06	1,212 36
Trout	"	20,730	0 10	2,073 00
Frost Fish	"	211,000	0 04	8,440 00
Squid	Brls.	70	4 00	280 00
Flounders	Lbs.	59,300	0 10	5,930 00
Smelts	"	3,955,438	0 06	237,326 28
Perch	"	10,000	0 03	300 00
Eels	Brls.	1,325	10 00	13,250 00
Oysters	Brls.	17,760	3 00	53,280 00
Lobsters	Cans.	1,752,573	0 12	210,308 76
do	Tons.	250	30 00	7,500 00
Fish Oil	Galls.	41.505	0 40	16,602 00
Fish Guano	Tons.	100	25 00	2,500 00
Fish as bait	Brls.	26,425	1 50	39,637 50
Fish as manure	"	18,900	0 50	9,450 00
Total				1,493,246 78

NEW BRUNSWICK—*Continued*—District No. 3.

RECAPITULATION showing the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries, Quantity and Value of Fishing Material, Kinds and Quantities of Fish, and the Total Number of Men Employed, &c., in District No. 3, of the Province of **New Brunswick**, for the Year, 1889.

COUNTIES.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.						KINDS OF FISH.			
	Vessels.				Boats.			Nets.		Weirs.		Lobsters Traps.					
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	No.	Value.	No.	Value.	Salmon, fresh, in ice, lbs.	Salmon, smoked, lbs.	Herrings, barrels.	Herrings, frozen, per 100.
District No. 3.			$			$			$		$		$				
Albert					2	100	4	500	200					1000			
Victoria					20	200	40	500	400					5000			
Carleton					55	850	110	600	350					7000			
York					73	1030	72	250	125					12800			
Sunbury	1	6	150	4	69	690	138	1610	785					750			
Queen's	1	6	150	4	194	3340	388	11475	3725					2950			
King's					44	440	42	2700	1176					15000			
St. John	19	370	7770	76	242	5040	454	75120	55060	24	9000	3528	3525	140000	2500	13033	500000
Totals	21	382	8070	84	699	11690	1248	92755	61821	24	9000	3528	3525	185500	2500	13033	500000

RECAPITULATION showing the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries, Quantity and Value of Fishing Material, &c., in District No. 3 of **New Brunswick**—*Concluded.*

COUNTIES.	KINDS OF FISH.														FISH PRODUCTS.		VALUE.
	Herrings, smoked, in boxes.	Alewives, barrels.	Cod, cwt.	Cod Tongues and Sounds, barrels.	Pollock, cwt.	Hake, cwt.	Haddock, cwt.	Shad, barrels.	Bass, lbs.	Trout, lbs.	Pickerel, lbs.	Perch, lbs.	Eels, barrels.	Lobsters, tons.	Fish Oil, gallons.	Fish used as bait, barrels.	
District No. 3.																	$ cts.
Albert								25		2000							650 00
Victoria								25		10000		500					2,265 00
Carleton								50		16000		1000	1				3,540 00
York								30	2000	8000	12000	2000	100				5,560 00
Sunbury		470						50	9900		42000	4000	10				6,099 00
Queen's		920						690	2300		64900	6000	70				16,532 00
King's		870				25		230	50400	1000	38000	1200	102				15,975 00
St. John	13000	5780	1100	20	500	500	2000	1500	3000	1500			60	100	1000	500	149,582 00
Total	13000	8040	1100	20	500	525	2000	2600	67600	38500	156900	14705	343	100	1000	500	200,203 00

RECAPITULATION of the Yield and Value of the Fisheries in District No. 3—New Brunswick.

Kinds of Fish.	Quantity.	Price.	Value.
		$ cts.	$ cts.
Salmon, fresh ..... Lbs.	185,500	0 20	37,100 00
do smoked ..... do	2,500	0 20	500 00
Herring ..... Brls.	13,033	4 00	52,132 00
do frozen ..... No.	500,000	60c. per 100	3,000 00
do smoked ..... Boxes	13,000	0 25	3,250 00
Alewives ..... Brls.	8,040	4 50	36,180 00
Cod ..... Cwt.	1,100	4 00	4,400 00
Cod tongues and sounds ..... Brls.	20	10 00	200 00
Pollock ..... Cwt.	500	4 00	2,000 00
Hake ..... do	525	4 00	2,100 00
Haddock ..... do	2,000	4 00	8,000 00
Shad ..... Brls.	2,600	10 00	26,000 00
Bass ..... Lbs.	67,600	0 06	4,056 00
Trout ..... do	38,500	0 10	3,850 00
Pickerel ..... do	156,900	0 06	9,414 00
Perch ..... do	14,700	0 03	441 00
Eels ..... Brls.	343	10 00	3,430 00
Lobsters ..... Tons.	100	30 00	3,000 00
Fish oil ..... Galls.	1,000	0 40	400 00
Fish as bait ..... Brls.	500	1 50	750 00
Total for 1889			200,203 00

RECAPITULATION by Counties showing the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries, &c.—
New Brunswick—*Continued.*

COUNTIES.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.								KINDS OF FISH.	
	Vessels.				Boats.			Nets.		Weirs.		Smelt Nets.		Lobster Traps.		Salmon, barrels.	Salmon, fresh, in ice, lbs.
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	No.	Value.	No.	Value.	No.	Value.		
			$			$			$		$		$		$		
Restigouche	....	....	....	....	115	1158	135	28100	7000	....	.....	5	100	2500	1250	.....	195600
Gloucester	40	501	15600	139	1363	60080	3199	90100	67795	1	500	285	6800	29650	28850	.....	419160
Northumberland	12	395	19000	50	402	7615	690	40743	18634	....	.....	706	18670	9000	9000	30	264341
Kent	9	144	4320	54	886	23238	1898	56060	24660	....	.....	500	15650	22461	22461	.....	42000
Westmoreland	....	....	....	....	673	12400	1351	27150	13650	....	.....	174	3580	10054	8054	.....	13488
Albert	....	....	....	....	2	100	4	500	200	....	.....	....	.....	....	.....	.....	1000
St. John	19	370	7770	76	242	5040	454	75120	55060	24	9000	....	.....	3528	3525	.....	140000
King's	....	....	....	....	44	440	42	2700	1176	....	.....	.....	.....	.....	.....	.....	16000
Queen's	1	6	150	4	194	3340	388	11475	3725	....	.....	.....	.....	.....	.....	.....	2950
Sunbury	1	6	150	4	69	690	138	1610	785	....	.....	.....	.....	.....	.....	.....	750
York	....	....	....	....	73	1030	72	250	125	....	.....	.....	.....	.....	.....	.....	12800
Carleton	....	....	....	....	55	850	110	600	350	....	.....	.....	.....	.....	.....	.....	7000
Victoria	....	....	....	....	20	200	40	500	400	....	.....	.....	.....	.....	.....	.....	5000
Charlotte	74	1317	42478	310	994	114861	1369	61623	38825	234	100830	.....	.....	15921	14495	....	150
Totals	156	2739	89468	637	5132	231042	9890	396531	232385	259	110330	1670	44800	93114	87635	30	1120239

RECAPITULATION by Counties showing the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries, &c.—
New Brunswick—*Continued.*

COUNTIES.	KINDS OF FISH.																
	Salmon, smoked, lbs.	Salmon, in cans, lbs.	Mackerel, barrels.	Mackerel, in cans.	Herrings, barrels.	Herrings, frozen, per 100.	Herrings, smoked, in boxes.	Alewives, barrels.	Cod, cwt.	Cod Tongues and Sounds, barrels.	Pollock, cwt.	Hake, cwt.	Hake Sounds, lbs.	Haddock, cwt.	Halibut, lbs.	Shads, barrels.	Bass, lbs.
Restigouche	.....	5500	.....	.....	100	.....	.....	.....	40	.....	.....	.....	.....	.....	.....	.....	.....
Gloucester	.....	3740	633	28560	24832	.....	50	850	91000	10	.....	2115	3541½	1000	1000	5	300
Northumberland	1800	100	270	.....	2913	.....	.....	2280	1000	.....	.....	450	200	.....	600	21	15346
Kent	.....	400	824	5624	9354	.....	.....	2135	1830	.....	.....	3400	5780	100	4560	19	3360
Westmoreland	.....	.....	410	500	15000	.....	2750	.....	20	.....	.....	.....	.....	.....	.....	1210	1200
Albert	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25	.....
St. John	2500	.....	.....	.....	13033	500000	13000	5780	1100	20	500	500	.....	2000	.....	1500	3000
King's	.....	.....	.....	.....	.....	.....	.....	870	.....	.....	.....	25	.....	.....	.....	230	50400
Queen's	.....	.....	.....	.....	.....	.....	.....	920	.....	.....	.....	.....	.....	.....	.....	690	2300
Sunbury	.....	.....	.....	.....	.....	.....	.....	470	.....	.....	.....	.....	.....	.....	.....	50	9900
York	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	30	2000
Carleton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50	.....
Victoria	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25	.....
Charlotte	.....	.....	10	.....	16009	21747860	2599100	100	15013	10	20370	25416	27640	4407	41400	.....	.....
Totals	4300	9240	2147	34684	81241	22247860	2614900	13405	110003	40	20870	31906	37161½	7507	47560	3855	87806

RECAPITULATION by Counties showing the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries, &c.—
New Brunswick—*Concluded.*

DISTRICTS.	KINDS OF FISH.												FISH PRODUCTS.				VALUE.
	Trout, lbs.	Frost fish, lbs.	Squid, barrels.	Flounders, lbs.	Smelt, lbs.	Pickerel, lbs.	Perch, lbs.	Eels, barrels.	Sardines, hds.	Oysters, barrels.	Lobsters, tons.	Lobsters, cans.	Fish Oil, gallons.	Fish Guano, tons.	Fish used as bait, barrels.	Fish used as manure, barrels.	$ cts.
Restigouche	500				7000						4	46300			300		47,026 00
Gloucester	6150		40		612594			94		3900	16	467773	39940		13000	11100	728,559 60
Northumberland	2950	190000		47800	1592170			672		12190		183780	400		1900	3400	265,134 76
Kent	9130	8000		9500	1470189		10000	397		1620		598048	1165	100	8025		282,759 58
Westmoreland	2000	13000	30	2000	273485			162		50	230	456672			3200	4400	169,766 84
Albert	2000																650 00
St. John	1500							60			100		1000		500		149,582 00
King's	1000					38000	1200	102									15,975 00
Queen's						64900	6000	70									16,532 00
Sunbury						42000	4000	10									6,099 00
York	8000					12000	2000	100									5,560 00
Carleton	16000						1000	1									3,540 00
Victoria	10000						500										2,265 00
Charlotte	13000	3500	219	25000	5500	1000			18145		685	48000	62219	223	18260	10307	*1,373,589 26
Totals	72230	214500	289	84300	3960938	157900	24700	1668	18145	17760	1035	1800573	104724	323	45185	29207	3,067,039 04

See County Returns.

RECAPITULATION of the Yield and Value of the Fisheries of the Whole Province of New Brunswick, 1889.

Kinds of Fish.	Quantity.	Value.	Total.
		$ cts.	$ cts.
Salmon.....Brls.	30	480 00	
do fresh in ice.....Lbs.	1,120,239	224,047 80	
do smoked..... do	4,300	860 00	
do cans..... do	9,240	1,386 00	
			226,773 80
Mackerel.....Brls.	2,147	32,205 00	
do .....Cans.	34,684	4,162 08	
			36,367 08
Herring.....Brls.	81,241	324,964 00	
do smoked.....Boxes	2,614,900	653,725 00	
do frozen (60c. per 100).....No.	22,247,860	133,487 16	
			1,112,176 16
Alewives.....Brls.	13,405	.....	60,322 50
Cod.....Cwt.	110,003	440,012 00	
do tongues and sounds.....Brls.	40	400 00	
			440,412 00
Pollock.....Cwt.	20,870	.....	83,480 00
Haddock..... do	7,507	.....	30,028 00
Hake..... do	31,906	127,624 00	
do sounds.....Lbs.	37,161½	37,161 50	
			164,785 50
Halibut.....Lbs.	47,560	.....	4,756 00
Shad.....Brls.	3,855	.....	38,550 00
Bass.....Lbs.	87,806	.....	5,268 36
Trout..... do	72,230	.....	7,223 00
Flounders..... do	84,300	.....	8,430 00
Smelts..... do	3,960,938	.....	237,656 28
Pickerel..... do	157,900	.....	9,474 00
Perch..... do	24,700	.....	741 00
Frost fish..... do	214,500	.....	8,580 00
Eels.....Brls.	1,668	.....	16,680 00
Squid..... do	289	.....	1,156 00
Sardines.....Hhds.	18,145	.....	54,435 00
Oysters..... Brls.	17,760	.....	53,280 00
Clams..... do	2,000	.....	12,000 00
Lobsters, in cans.....Lbs.	1,800,573	216,068 76	
do fresh.....Tons.	1,035	31,050 00	
			247,118 76
Fish oil.....Galls.	104,724	.....	41,889 60
do as bait.....Brls.	45,185	.....	67,777 50
do as manure..... do	29,207	.....	14,603 50
do guano.....Tons.	323	.....	8,075 00
do used in District No. 1, not included above.....	.....	.....	75,000 00
Total for 1889.....	.....	.....	3,067,039 04
do 1888.....	.....	.....	2,941,863 05
Increase.....	.....	.....	125,176 00

APPENDIX No. 5.

PRINCE EDWARD ISLAND.

REPORT ON THE FISHERIES OF PRINCE EDWARD ISLAND FOR THE YEAR 1889, BY INSPECTOR ED. HACKETT.

TIGNISH, P.E. ISLAND, 31st December, 1889.

Hon. CHARLES H. TUPPER,
Minister of Marine and Fisheries.

SIR,—I have the honor to submit my annual report on the fisheries of the Province of Prince Edward Island for the year 1889, together with statement of product and values for each of the three counties of Prince, Queen's and King's. Also, an estimate of capital employed in the fisheries of the Province for the season just closed.

The returns show a slight increase in the aggregate value of $9,568.10, as compared with the previous year, as follows :—

Total value of Prince Edward Island fisheries 1888...		$876,862 74
do do do 1889...		886,430 84
Increase.....	.....	$9,568 10

Although the returns exhibit this slight increase, many branches of the fishery show a considerable falling off. The cod fishery was not prosecuted with vigor, resulting in a decrease if 17,886 cwt. in this fishery alone. This falling off was not due to a scarcity of fish, but to the fact that fishermen generally prepared for the supposed more lucrative and less laborious mackerel fishery, thereby neglecting this valuable branch of the coast fisheries.

Mackerel appeared early, and being of large size and great value, the fishermen hoped to reap a rich harvest.

They were, however, doomed to dissappointment, this valuable fish being scarce during the whole season, and as very few schools were seen, and fish exceedingly shy of the hook, both seiners and hook-and-line fishermen failed in their efforts to take them. The catch is therefore much below the average, but is about equal to that of last year.

Herring was abundant, and large quantities were taken. This fish is not prepared for export, almost the whole catch being used for bait in the lobster and mackerel fisheries.

Lobsters show an increase of 614,720 lbs., the total quantity canned being 2,060,947 lbs., as against 1,446,227 lbs. in 1888. Eighty-one factories were in operation, being two more than in the previous year, but the returns show that about 2,000 less traps were worked. The increase was largely due to the season opening early, giving the fishermen from ten to fifteen days additional fishing. The lobsters, expecially on the south side, were of much better quality than of late years; and it is to be hoped that this fishery has reached its lowest point, and will henceforth improve.

Oysters were plentiful, and the season being remarkably favorable, the fishery was actively prosecuted. The total shipments were 41,257 barrels, being 5,396 barrels in excess of last year. Smelts for export appear in the returns for the first

time, 346,100 lbs. being shipped during the year. Fishing smelts for shipment is a new industry. Quite a member of people are engaged in it this year, and it is believed to be capable of great development.

Rivers and streams were not in a good condition. As a consequence, trout shows a decrease of 18,080 lbs. The greatest falling off occurs in Queen's, which has a deficiency of about 12,000 lbs.

The season's operations generally cannot be considered satisfactory, and with the exception of the lobster and oyster fisheries, show poor results. More extended details under the respective headings are given below.

HERRINGS

first strike the Island coast about the end of April, or immediately on the breaking up of the ice, and continue until about the 15th June. This run is known as "Spring Herring," and are taken chiefly for bait, only a small quantity being packed for food. They were most abundant this year, and a full supply was secured at small cost. This was of advantage to the fishermen, who were thus enabled to prosecute the lobster and mackerel fisheries with greater chances of success. No fall herring were taken this year. Large schools were noticed off the southern coast of King's County in November. Fishermen, however, report them as being too small to net and of no commercial value. For several years past large quantities of fall herring have been taken at Souris, Cardigan, Georetown, and other eastern points. The fish are large and fat, and with improved methods of curing and packing, might become a remunerative branch of industry.

CODFISH.

This fishery shows a marked decrease, which very materially reduces the returns for the year. The deficit, however, is not due to any scarcity, codfish being most abundant during the whole season. With mackerel selling at $20 a barrel, Island fishermen will not prosecute the cod fishery, but follow the more uncertain mackerel fishery, hoping that each day will bring them better luck. In this way much valuable time is lost, and when the season is over the disappointed fisherman regrets (when it is too late) that he did not follow the fishery that would have yielded him sure returns.

About one hundred and fifty sails of large boats from the north shore of New Brunswick were engaged cod fishing in the vicinity of Cascumpec and North Cape all summer, and loaded up several times. A small fleet of vessels from Nova Scotia made their headquarters at St. Peters and Rustico during the season, and were most successful. As the mackerel fishery is evidently becoming worse each successive year, Island fishermen should provide themselves with suitable and properly equipped boats for cod fishing, which, if actively and intelligently prosecuted, is the most remunerative of all the fisheries.

MACKEREL.

The Island mackerel fishery may be pronounced a failure, only 12,450 barrels and 99,270 one pound cases being packed. Considering the vast preparations made, the year's catch is most insignificant. Ten or fifteen years ago the whole pack of this season would only be considered a fair year's work for a single establishment. The fish struck early, some good catches with hook and line being made about the 1st July. They were of excellent quality, and commanded high prices: consequently, fishermen and buyers were in great spirits, in anticipation of a successful year's operations. In this they were dissapointed. The fish did not show up in any quantity, and did not remain inshore for any length of time. A remarkable falling off in the catch on some parts of the coast is noticeable, particularly from East Point to Rustico, where the quantity taken was not half that of last year. Various reasons are given for the decline of the mackerel fishery, but it is generally conceded that the use of the purse-seine more than any other cause has reduced this valuable

industry to its present unfortunate condition. Mackerel are, however, very erratic in their movements; and even before purse-seines were introduced, fishermen were compelled to submit to occasional bad years, owing to a scarcity of fish. It is not contended that the quantity taken by seiners can materially diminish the supply. The injury is caused by breaking up the schools, driving the fish off their old feeding grounds and compelling them to seek new haunts. Mackerel are amongst the most wary of fish. They are ever on the alert, and the slightest noise or disturbance will break up a school and cause the fish to scatter in all directions. At present, when a school is noticed at any point on the coast, it is immediately pursued by seiners, and, if not captured, is driven off, never to return. This year seiners were very unsuccessful; hook-and-line fishermen having generally done better. A number of American vessels came into the Gulf early, but being kept well outside the three-mile limit, did not remain long, many of them returning home with only a few barrels of fish.

HAKE AND HADDOCK.

Hake shows a decrease of 5,342 cwt. There was an abundance of fish during the season, but fishermen did not make any efforts to take them. This fishery is mainly prosecuted at night, and unless prices are good fishermen will not embark in it. This year there was no inducement: hence the small catch. Fishing for haddock is not pursued as a separate industry, the small quantity appearing in the returns being taken in connection with the cod and hake fisheries.

LOBSTERS.

Owing to the early spring lobster fishermen were at work ten or fifteen days earlier than in 1888. As a result, the fishery shows a considerable increase.

The season was also favorable, little or no time being lost by stormy weather.

It is difficult to determine whether the shortened season of 1888 had any effect in increasing the supply this year.

All the packers report good fishing, with good-sized lobsters the first thirty days. After that time they commenced to run small, and towards the close of the season it was found difficult to keep the factories running on fish of the legal size—consequently, many closed about the 1st July. Eighty-one factories were in operation, being two more than last year. A number of these, although called factories, are not such in reality, but merely fishing places, the product being conveyed to the main factory, where it is packed. The returns show that 77,000 traps were worked, a decrease of 1,715. The production per trap was $26\frac{5}{7}$ 1-pound cans. This shows an increased production of $8\frac{1}{3}$ cans per trap over the previous year. Fishermen and packers are beginning to realize that a large number of traps is not necessary to a successful year's fishing. Lobsters, unlike other fish, do not move up and down the coast to any great extent.

They come in from deep water to certain points along the coast in the spring, and if the conditions are favorable, remain there. In the present condition of the fishery it is not necessary, therefore, to have a large number of traps, as a comparatively small number, well attended, will take all the lobsters frequenting any particular ground. The lobster fishery, though greatly depleted, continues to be the most valuable of the fisheries of this Province, yielding this year $247,313.64, or 28 per cent. of the whole export. It is the first of the fisheries giving employment in the spring, and although there is no distinct fishing class in the Province, yet there are numbers of people in all the villages on the Island coast who depend largely upon it as a means of subsistence. Its perpetuation is therefore of the highest importance, and the prompt and decisive action taken by the Department in shortening the fishing season and rigorously enforcing the regulations is generally approved.

OYSTERS.

This fishery shows an increase of 5,396 barrels, the total production for the year being 41,257 barrels, as compared with 35,861 barrels in 1888. Warm weather at

the beginning of the fishing season somewhat retarded operations for a while, and some of the shipments reached the markets in bad order, causing prices to rule low. October and November, however, were favorable months, and business was more satisfactory. A mild winter and a dry summer were favorable to the growth of the oyster, and beds that have been raked season after season produced the usual quantity. Richmond Bay continues to supply the bulk of the oysters exported, but large quantities were also shipped from the Narrows, Grand River and other places in Prince County. That the oyster fishing of this Province can continue for many years to yield the large quantity now taken from it annually, is improbable. There is also the possibility of a still larger quantity being required from it in the future. For some years past the supply has been about equal to the demand, a glut in the market only occurring when a protracted period of warm weather forced the shippers to sell their product at any price they could obtain. With the growth of population in the cities and towns of the western Provinces it is evident that an increased demand will be created and the fishery will be required to produce a larger supply. The beds in Queen's County are now greatly overfished, and unless proper care is taken the Prince County beds may soon be in the same condition. The protection given by the present close season, while fairly satisfactory, is not sufficient. Large quantities of small oysters are landed during the fishing season, and as they are unfit for shipment, and cannot be utilized in any way, are allowed to rot in heaps, where culled. Action should be taken to prevent this reckless waste, and prohibit the landing of small oysters.

In the interest of the fishery, winter fishing should be prohibited also. Fishing oysters in winter, while of advantage to a few fishermen, is most destructive to the beds, and some of the best beds in the rivers of Queen's County have been ruined by it. To preserve the beds at Orwell, York River, and West River, in Queen's County, decisive action is necessary; and the question of totally closing the fishery on them for a term of years is deserving of serious consideration. Oyster culture might be carried on to great advantage in this Province, the numerous rivers and bays of the Island being specially adopted for that industry. Large areas, now vacant, could be utilized for the growing of oysters, and, if surveyed and offered on lease, under proper and reasonable restriction, would, no doubt, be readily taken up. The system of leasing grounds for the cultivation of oysters in the States of Connecticut, Rhode Island, &c., has resulted in a marvellous expansion of the industry, and it would seem as if the time had arrived when a similar policy should be adopted in Canada. The natural beds should be properly protected, and the control of them retained by the Department to be used as a public fishery.

TROUT.

Owing to the generally bad condition of the rivers and streams, trout shows a decrease of 18,080 lbs. There is no export of this fish, the quantity appearing in the returns being taken by local sportsmen and others, who follow angling as a recreation. Not many years since trout of large size and fine quality were abundant in nearly all the streams of this Province. Now, however, it is not so, some of the finest rivers being sadly depleted. Many causes have combined to bring about this result. The rivers being small, were easily overfished.

Poaching has, no doubt, also been carried on to a certain extent. The clearing away of the forest, by reducing the volume of water in the rivers and causing it to become warmer, must have a bad effect on the fish frequenting them. Sawdust and mill rubbish, in many instances, add to the pollution of the streams. All these agencies being at work assisted to diminish the supply, and bring about the present scarcity. Some of the rivers are yet, however, in fairly good condition, and if properly protected will continue for many years to afford healthful exercise and recreation to the legitimate sportsman.

SALMON.

Clean salmon are not found in the rivers of this Province, the small quantity appearing in the returns being taken in nets set on the coast, chiefly in the vicinity

of St. Peter's Bay. The wardens report a great abundance of breeding salmon in the principal rivers this fall. They were noticed in great numbers in the Morell, Midgell, Brudenell and Fortune rivers, in King's County, and in the Winter, West, Tryon, Dunk and other rivers in Prince and Queen's counties.

Poachers on Dunk River gave considerable trouble. The abundance of fish increased their audacity, and setting all law at defiance, they made most determined efforts to take them, coming in collision with the wardens on more than one occasion.

EELS.

Considerable quantities of eels are taken and exported each year. They are chiefly taken by spearing in the fall and winter months. It is believed that spearing for eels from boats is injurious to the other river fisheries, and that under the pretence of spearing eels poachers capture large quantities of salmon and trout. I would beg to recommend that spearing eels be prohibited from 1st June to 1st December in each year.

OTHER FISHERIES.

Halibut shows a decrease of 4,970 lbs. No special effort is made to take halibut, the quantity landed being taken in connection with the cod fishery. Those taken are of excellent quality, and find ready sale in the local markets.

Shad is not fished for in the Island waters, the only barrel appearing in the returns being taken early in the season in the trap-net at Tignish.

Bass shows an increase of 1,600 lbs., this small quantity being caught near Tracadie, on the north side of the Island.

GENERALLY.

As a result of the falling off in the catch of cod, fish oil, tongues and sounds and other fish products show a decrease. Unmanufactured fish manure is returned at 1,520 barrels in excess of the previous year. This product might be largely increased if properly attended to. Tons of valuable fertilizers are lost each year through neglect and want of enterprise in not having it manufactured.

The protection afforded on inshore fisheries by Government cruisers was greatly appreciated by shore fishermen this year. No seining by foreigners was allowed this year inside the three-mile limit, and although the catch made by shore fishermen was smaller than usual it would have been much less had the vessels hovering on the outside edge of the three-mile belt been permitted to fish inshore.

In conclusion, I have much pleasure in stating that during the short time I have been in office I found the wardens and others in the service ready and willing to perform their duty. They are generally active and intelligent men, and I believe endeavor to faithfully carry out any instructions given them.

Two additional wardens are urgently required in King's County, one at Cardigan, which has been vacant for some time, and one at least on the Brudenell River. Both places are of importance, and have no protection of any kind at present.

I have the honor to be, Sir,
Your obedient servant,

EDWARD HACKETT,
Inspector of Fisheries for Prince Edward Island.

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries, Quantity and Value of Fishing Material, Kinds and Quantities of Fish, and the Total Number of Men Employed, &c., in the Province of **Prince Edward Island**, for the Year 1889.

DISTRICTS.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.						KINDS OF FISH.			
	Vessels.				Boats.			Nets.		Seines.		Trap.					
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	Fathoms.	Value.	No.	Value.	Salmon, fresh, in ice, lbs.	Mackerel, barrels.	Mackerel, in cans.	Herrings, barrels.
Prince Co.			$			$			$		$						
From North Line of Lot 3 to Sea Cow Pond	3	150	3000	45	50	2000	150	1200	600	850	1700	1	800	200	1500	36400	1000
From Sea Cow Pond to South Nail Pond	....	....	....	....	55	1650	180	1848	924	300	600	....	....	....	346	.....	2251
South Nail Pond to Line of Lot 1	....	....	....	....	47	1200	149	1040	520	830	1660	....	....	....	502	7200	1708
From Line of Lot 1 to Line of Lot 3	2	80	1600	24	70	3500	280	1500	750	1280	2560	....	....	....	950	22500	1500
South Line of Lot 3 to Seal Point	5	179	3580	40	15	450	45	1020	510	320	640	....	....	....	229	960	526
From Seal Point to South Line of Lot 8	1	17	340	6	20	800	50	800	400	150	300	....	....	....	250	14400	1000
Line of Lot 8 to Egmont Bay	....	....	....	....	10	200	20	500	250	....	....	....	....	....	24	.....	626
From Egmont Bay to Fifteen Point	1	19	380	5	52	1438	104	2014	1007	440	880	....	....	....	278	.....	2414
Bedeque Bay, Summerside and Richmond Bay	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
From Graham Head to Cape Traverse	....	....	....	....	8	168	12	200	100	....	....	....	....	....	....	.....	400
The Narrows and Lot 12 shore	....	....	....	....	7	300	19	520	260	200	400	....	....	....	20	.....	600
Narrows to Kildare Cape	9	455	9100	90	50	4000	140	3000	1500	1566	3132	....	....	....	1525	.....	1630
Malpeque and Indian River	....	....	....	....	20	600	40	....	....	....	....	....	....	....	250	.....	500
Lot 10 River	1	18	360	5	3	60	6	60	30	....	....	....	....	....	....	.....	20
Grand River, Lot 14	....	....	....	....	2	60	8	400	200	....	....	....	....	....	12	80	.....
From Carleton Point to Queen's County Line	1	29	580	5	4	150	9	140	70	....	....	....	....	....	12	190	60
Rivers and Streams, viz.: Dunk, Trout and others	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....
Totals	23	947	18940	220	413	16568	1212	14242	7131	5936	11872	1	800	200	5898	81730	14235

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries, &c.—**P. E. Island**—*Continued.*

DISTRICTS.	KINDS OF FISH.													FISH PRODUCTS.		VALUE.
	Alewives, barrels.	Cod, cwt.	Cod Tongues and Sounds, barrels.	Hake, cwt.	Hake Sounds, brls.	Haddock, cwt.	Halibut, lbs.	Shad, barrels.	Trout, lbs.	Smelt, lbs.	Eels, barrels.	Oysters, barrels.	Lobsters, cans.	Fish Oil, gallons.	Fish used as manure, barrels.	
Prince Co.—Concluded.																$ cts.
From North Line of Lot 3 to Sea Cow Pond	....	1100	....	200	400	50	1500	1	500	3000	....	.....	119568	700	.....	51,526 16
From Sea Cow Pond to South Nail Pond	20	187	....	165	250	....	.....	....	650	.....	5	....	56160	352	450	23,037 00
South Nail Pond to Line of Lot 1	10	354	...	130	....	....	.....	....	200	.....	....	....	151440	230	350	35,666 80
From Line of Lot 1 to Line of Lot 3	....	220	....	600	900	40	950	....	1200	2800	17	.....	94128	450	.....	38,868 36
South Line of Lot 3 to Seal Point	....	124	1	248	132	....	.....	....	1000	.....	3	.....	43008	155	500	12,821 16
From Seal Point to South Line of Lot 8	....	125	....	80	100	....	.....	....	.....	.....	2	.....	103208	75	1200	23,382 96
Line of Lot 8 to Egmont Bay	9	.....	....	.....	.....	....	.....	....	2600	.....	3	60	.....	.....	.....	3,374 50
From Egmont Bay to Fifteen Point	....	12	....	.....	.....	....	.....	....	.....	.....	.....	.....	178416	....	.....	35,283 92
Bedeque Bay, Summerside and Richmond Bay	....	.....	....	.....	.....	....	.....	....	.....	120000	30	21930	.....	.....	.....	73,290 00
From Graham Head to Cape Traverse	....	.....	....	.....	.....	....	.....	....	200	.....	.....	.....	.....	.....	.....	1,620 00
The Narrows and Lot 12 shore	....	300	....	.....	.....	....	.....	....	.....	.....	.....	2400	26928	100	.....	14,371 36
Narrows to Kildare Cape	....	500	6	.....	.....	....	.....	....	100	30000	270	50	80400	250	800	46,263 00
Malpeque to Indian River	....	3000	..	500	.....	....	.....	....	200	10000	80	4606	58944	400	800	42,621 28
Lot 10 River	10	.....	....	.....	.....	....	.....	....	200	100000	80	20	.....	.....	.....	7,005 00
Grand River, Lot 14	....	24	....	.....	.....	....	.....	....	.....	.....	20	2250	.....	.....	.....	7,235 60
From Carleton Point to Queens County Line	15	6	....	5	.....	....	.....	....	5000	.....	.....	.....	56580	10	600	8,147 90
Rivers and Streams, viz.: Dunk, Trout and others	....	.....	....	.....	.....	....	.....	....	7200	60000	90	800	.....	.....	.....	7,620 00
Totals	64	5952	7	1928	1782	90	2450	1	19050	325800	600	32116	968780	2722	4700	432,135 00

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries, &c, in the Province of **Prince Edward Island**—*Continued.*

DISTRICT.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.				KINDS OF FISH.			
	Vessels.				Boats.			Nets.		Seines.					
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	Fathoms.	Value.	Mackerel, barrels.	Mackerel, in cans.	Herrings, barrels.	Alewives, barrels.
Queen's Co.			$			$			$		$				
From S.E. Line of Prince Co. to New London	2	30	600	9	18	1200	54	2000	1000	640	1280	150		200	
Hunter River to Cavendish					11	330	33	200	100			120		112	
New London to Sand Hill Point					6	140	20	160	80			18		160	20
Wheatley River to Robinson's Island					5	500	25	100	50			12		150	
Clifton Bridge to County Line W					1	60	4	40	20			5		10	
Upper Hillsborough and tributaries															
From Black Point to Birch Point	2	100	2000	8	10	300	20	500	250	115	230	50		400	50
Pownal Bay and Seal River															
From Savage Harbor to Cove Head	1	16	400	6	44	2200	176	11289	5644	1750	3500	622	11400	1048	
Rustico District	1	18	360	10	55	3400	250	3000	1500	1800	3600	1235		3000	
St. Peter's Island and Lot 65					51	1115	88	1220	610					499	
Charlottetown District															
S.W. Line of King's Co. to Point Prim	8	210	4000	118	6	110	10	750	375	150	300	45	4000	80	
Orwell District					4	600	6					6		30	
Rivers and Streams, viz.: Vernon, West Winter and others					16	192	16					8			4
Totals	14	374	7360	151	227	10147	702	19259	9629	4455	8910	2271	15040	5689	74

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries, &c., in the Province of **Prince Edward Island**—*Continued.*

DISTRICT.	KINDS OF FISH.													FISH PRODUCTS.		VALUE.
	Cod, cwt.	Cod Tongues and Sounds, barrels.	Hake, cwt.	Hake Sounds, lbs.	Haddock, cwt.	Halibut, lbs.	Bass, lbs.	Trout, lbs.	Smelt, lbs.	Eels, barrels.	Oysters, barrels.	Lobsters, cans.	Fish Oil, gallons.	Fish used as manure, barrels.	
Queen's Co.—Concluded.															$ cts.
From S.E. Line of Prince Co. to New London	785	....	10	5	.....	.....	.....	.....	.....	.....	.....	65088	345	200	14,281 06
Hunter River to Cavendish	116	....	.....	.....	.....	30	.....	900	.....	25	.....	.....	50	.....	3,075 00
New London to Sand Hill Point	420	....	85	.....	.....	.....	.....	850	400	10	.....	.....	.....	.....	3,229 00
Wheatley River to Robinson's Island	250	....	100	.....	.....	.....	.....	120	.....	105	.....	.....	.....	.....	3,242 00
Clifton Bridge to County Line W	50	....	.....	.....	.....	.....	.....	100	2000	30	130	.....	.....	.....	1,135 00
Upper Hillsborough and tributaries	.....	.....	.....	.....	.....	.....	.....	1000	2500	400	1200	.....	.....	.....	7,850 00
From Black Point to Birch Point	20	....	10	....	15	.....	.....	1000	1000	10	.....	31680	20	.....	6,824 60
Pownal Bay and Seal River	.....	.....	.....	.....	.....	.....	.....	200	800	3	540	.....	.....	.....	1,718 00
From Savage Harbor to Cove Head	1810	....	.....	.....	.....	.....	1600	....	1000	150	.....	74544	100	.....	33,088 08
Rustico District	1000	...	.....	.....	100	.....	.....	600	2000	200	.....	48000	300	500	43,235 00
St. Peter's Island and Lot 65	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1100	140064	.....	500	22,353 68
Charlottetown District	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1025	.....	.....	.....	3,075 00
S.W. Line of King's Co. to Point Prim	25	1	60	60	20	.....	.....	350	2000	2	10	78680	30	500	11,843 60
Orwell District	.....	.....	.....	.....	.....	.....	.....	300	.....	.....	2600	.....	.....	.....	8,040 00
Rivers and Streams, viz.: Vernon, West Winter and others	.....	.....	.....	.....	.....	.....	.....	1500	4000	90	2536	.....	....	.....	9,036 00
Totals	4476	1	265	65	135	30	1600	6920	15700	1025	9141	438056	1745	1700	172,026 02

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries, &c., in the Province of **Prince Edward Island**—*Continued.*

DISTRICTS.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.				KINDS OF FISH.			
	Vessels.				Boats.			Nets.		Seines.					
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	Fathoms.	Value.	Salmon, fresh, in ice, lbs.	Mackerel, brls.	Mackerel, in cans.	Herrings, brls.
King's Co.			$			$			$		$				
Fortune District, Rollo Bay to Lake Pond	2	25	500	8	27	324	81	540	270	480	960	.....	60	.....	250
From Little River to DeGros Marsh, including Broughton Island	.....	.....	.....	.....	110	2200	220	5000	2500	500	1000	.....	200	.....	4000
Lots 46 and 47 to Red Point	.....	.....	.....	.....	193	4500	570	8500	4250	180	360	.....	1093	.....	2186
St. Peter's Harbor to Ore River	1	30	600	8	55	2490	126	12815	6408	.....	.....	1000	1448	.....	558
Lot 63 to South-East Line of Queen's	15	375	7540	90	55	2200	165	2500	1250	250	500	.....	100	.....	300
Red Point to Souris Head	2	160	3200	32	20	600	40	1000	500	600	1200	.....	200	...	300
St. Peter's Harbour to Queen's North-East Line	.....	.....	.....	.....	18	845	45	4740	2370	.....	.....	.....	305	.....	422
Schooner Pond to Naufrage	.....	.....	.....	.....	65	600	185	5000	2500	300	600	200	200	2500	200
Georgetown to Murray Harbour	4	141	2820	30	80	2000	250	6000	3000	180	360	.....	475	.....	5000
Montague	3	90	1800	20	30	400	90	350	175	100	200	.....	200	.....	800
Totals	27	821	16460	188	653	16159	1772	46445	23223	2590	5180	1200	4281	2500	14016

RETURN showing the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries, &c., in the Province of **Prince Edward Island**—*Concluded.*

DISTRICTS.	KINDS OF FISH.											FISH PRODUCTS.		VALUE.
	Alewives, brls.	Cod, cwt.	Cod Tongues and Sounds, brls.	Hake, cwt.	Hake Sounds, lbs.	Haddock, cwt.	Halibut, lbs.	Trout, lbs.	Smelt, lbs.	Eels, brls.	Lobsters, cans.	Fish Oil, galls.	Fish used as manure, brls.	
King's Co.—Concluded.														$ cts.
Fortune District, Rollo Bay to Lake Pond	.....	100	....	75	.....	60	.....	2000	400	4	4500	120	.....	3,692 00
From Little River to DeGros Marsh, including Broughton Island	.....	100	....	150	150	.....	.....	.....	.....	20	8454	100	500	30,708 36
Lots 46 and 47 to Rea Point	50	3895	....	900	900	75	500	7000	2300	25	69368	3595	700	56,544 16
St. Peter's Harbor to Ore River	100	1051	5	200	50	10	500	.....	.....	.. ..	33600	1000	.....	34,203 00
Lot 63 to South-East Line of Queen's	.....	4500	10	3000	5500	500	.....	300	.....	75	300719	3770	5000	78,424 28
Red Point to Souris Head	.....	350	....	200	100	.....	.....	.....	.....	.....	27840	200	.....	9,870 80
St. Peter's Harbor to Queen's North-East Line	105	352	...	10	.....	20	250	1000	1800	25	18420	120	500	11,254 96
Schooner Pond to Naufrage	4	200	....	300	.....	10	....	1500	100	.....	35136	200	.....	10,650 32
Georgetown to Murray Harbour	50	100	....	50	100	.....	.....	.....	.....	.....	80000	200	.....	37,680 00
Montague	10	120	2	40	.. ..	.....	.....	1000	.....	40	.....	80	.....	7,437 00
Rivers, viz. :—Morell, Marie, Midgell and others	.. ...	.....	....	.....	.....	.....	.....	18050	.....	.....	.....	....	.....	1,805 00
Totals	319	10768	17	4925	6800	675	1250	30850	4600	189	654111	9385	6700	282,269 82

RECAPITULATION showing the Number, Tonnage and Value of Vessels and Boats engaged in the Fisheries, Quantity and Value of Fishing Material, Kinds and Quantities of Fish, and the Total Number of Men Employed, &c., in the Province of **Prince Edward Island**, for the Year 1889.

COUNTIES.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.						KINDS OF FISH.				
	Vessels.				Boats.			Nets.		Seines.		Trap.						
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	Fathoms.	Value.	No.	Value.	Salmon, fresh, in ice, lbs.	Mackerel, brls.	Mackerel, in cans.	Herrings, brls.	Alewives, brls.
			$			$			$		$		$					
Prince	23	947	18,940	220	413	16,568	1,212	14,242	7,121	5,936	11,872	1	800	200	5,898	81,730	14,235	64
Queen's	14	374	7,360	151	227	10,147	702	19,259	9,629	4,455	8,910	....	....	.....	2,271	15,040	5,689	74
King's	27	821	16,460	188	653	16,159	1,772	46,445	23,223	2,590	5,180	....	....	1,200	4,281	2,500	14,016	319
Totals	64	2,142	42,760	559	1,293	42,874	3,686	79,946	39,973	12,981	25,962	1	800	1,400	12,450	99,270	33,940	457

COUNTIES.	KINDS OF FISH—*Concluded.*													FISH PRODUCTS.		VALUE.
	Cod, cwt.	Cod Tongues and Sounds, brls.	Hake, cwt.	Hake Sounds, lbs.	Haddock, cwt.	Halibut, lbs.	Shad, brls.	Bass, lbs.	Trout, lbs.	Smelt, lbs.	Eels, brls.	Oysters, brls.	Lobsters, cans.	Fish Oil, galls.	Fish used as manure, brls.	
																$ cts.
Prince	5,952	7	1,928	1,782	90	2,450	1	.....	19,050	325,800	60	32,116	968,780	2,722	4,700	432,135 00
Queen's	4,476	1	265	65	135	30	....	1,600	6,920	15,700	1,025	9,141	438,056	1,745	1,700	172,026 02
King's	10,768	17	4,925	6,800	675	1,250	....	.....	30,850	4,600	189	.....	654,111	9,385	6,700	282,269 82
Totals	21,196	25	7,118	8,647	900	3,730	1	1,600	56,820	346,100	1,814	41,257	2,060,947	13,852	13,100	886,430 84

RECAPITULATION.

YIELD and Value of the different Fisheries in the Province of **Prince Edward Island** during the Year 1889.

Kinds of Fish.		Quantity.	Price.	Value.	Increase.	Decrease.
					Quantity.	Quantity.
			$ cts.	$ cts.		
Salmon, fresh	Lbs.	1,400	0 20	280 00	.....	163
Mackerel	Brls.	12,450	15 00	186,750 00	.....	198
do canned	Lbs.	99,270	0 12	11,912 40	64,910	.....
Herring	Brls.	33,940	4 00	135,760 00	1,057	.....
Alewives	do	457	4 50	2,056 50	.....	138
Cod	Cwt.	21,196	4 00	84,784 00	.....	17,866
Cod Tongues and Sounds	Brls.	25	10 00	250 00	.....	143
Hake	Cwt.	7,118	4 00	28,472 00	.....	5,342
Hake Sounds	Lbs.	8,647	0 50	4,323 50	8,647	.....
Haddock	Cwt.	900	4 00	3,600 00	.....	26
Halibut	Lbs.	3,730	0 10	373 00	.....	4,970
Shad	Brls.	1	10 00	10 00	1	.....
Bass	Lbs.	1,600	0 06	96 00	900	.....
Trout	do	56,820	0 10	5,682 00	.....	18,080
Smelts	do	346,100	0 06	20,766 00	346,100	.....
Eels	Brls.	1,814	10 00	18,140 00	.....	123
Oysters	do	41,257	3 00	123,771 00	5,396	.....
Lobsters, canned	Lbs.	2,060,947	0 12	247,313 64	614,720	.....
Fish oil	Galls.	13,852	0 40	5,540 80	.....	4,531
Unmanufactured fish manure	Brls.	13,100	0 50	6,550 00	1,520	.....
Total value of P. E. I. Fisheries in 1889		.....	.....	886,430 84		
do do 1888		.....	.....	876,862 74		
Increase in 1889		.....	.....	9,568 10		

ESTIMATE

Of Capital employed in the Fisheries of the Province of **Prince Edward Island** in the Year 1889.

	Value.	Total.
	$ cts.	$ cts.
64 vessels, 2,142 tons	42,760 00	
1,293 boats	42,874 00	
79,946 fathoms of nets	39,973 00	
12,981 do seines	25,962 00	
95,450 do trawls	5,000 00	
50 smelt nets	1,000 00	
77,000 lobster traps	46,200 00	
1 trap	800 00	
Fish stages and appliances, say	15,000 00	
81 lobster factories in operation, with outfit	64,800 00	
600 oyster boats and rakes	9,000 00	
		293,369 00

APPENDIX No. 6.

QUEBEC.

REPORT OF THE FISHERY OFFICER IN CHARGE OF THE GOVERNMENT VESSEL "LA CANADIENNE," ENGAGED IN THE PROTECTION OF THE GULF OF ST. LAWRENCE FISHERIES, FOR THE YEAR 1889.

Gaspé, 31st December, 1889.

Hon. Charles H. Tupper,
Minister of Marine and Fisheries.

Sir,—I beg herewith to present my report on the fisheries of the Gulf Division for the season just closed, together with synopses of the reports of the various local officers in charge of sub-divisions, and statistical returns for each of the sub-divisions and counties forming the division.

These returns show an increase of the total of the fishery product, over the similar returns for 1888, of $131,167.31.

SALMON.

The returns from this fishery show a decrease, over the whole division, of 53,140 lbs. The salmon struck along the coast of Gaspé and Bonaventure about the middle of May; the run was not steady. As a rule, the fish taken were large, many reaching the unusual weight of 50 lbs. The decrease in the catch may, without doubt, be attributed, on the south shore, to the fine and early spring and the consequent quick subsidence of the spring freshets, so that the fish did not remain in the tideway, but pushed up the rivers. On the upper part of the north shore the fishery in the estuaries was good, being above the average, while on that part of the north coast to the eastward of Natashquan the fishery failed. This failure was attributed by the fishermen to rough weather and a late run of the fish. On many of the Labrador rivers it was noticed that the fish began to take the rivers during the last week of the fishing season. This was clearly proved by the fact that only such nets as were kept out right up to the close of the season took anything worth while. Over the greater part of the coast, between Natashquan and Blanc Sablon, the nets were taken up early in July, as the fishermen had got discouraged. A few old hands, believing that the run had not taken place, re-set their nets during the last week of the season. These were in every case rewarded by a good week's fishing. The fact that the run was late was clearly demonstrated on that part of the Labrador coast to the eastward of the Province of Quebec, where, there being no limit to the open season, nets that were fished in August did well.

The season was a poor one for anglers, as owing to the slight snowfall of the previous winter and the early and dry spring, the rivers fell rapidly, so that during the fishing season the water was in most rivers too low and clear for good sport.

COD.

The first cod were taken along the Gaspé coast about the 22nd of May, being a couple of weeks earlier than has been usual of late years. The fish struck in great abundance and the summer fishery was the best that has been made for a long time. The fishery was particularly good off Percé and Point St. Peter. There is no doubt that the fish had struck in before the boats were ready, it being the custom of recent years not to expect the fish in quantity before the middle of June.

It was noticed that the fish kept pretty well inshore, and was abundant right up the Bay of Chaleur, where it had not been seen for many years. Had bait been plenty and the weather continued fine we should have had a very heavy fishery, as at the close of the summer season, on the 15th August, the average stood high; but unfortunately, from the 15th September to the close of navigation, the weather was so continuously rough that the boats were only able to make a couple of trips to the banks.

On the north coast and Labrador the fishery was slightly better than in 1888. At Natashquan, and below as far as the Straits, it was of short duration, not lasting more than three weeks. During this time fish were very abundant, and boats that kept constantly at work did well, several at Natashquan taking over 100 cwt. with the hook and line within the three weeks. On the little north shore, that is, from Natashquan west, the fishery was not up to the average, save at St. John's River and Magpie, where the catch was fairly good. At Anticosti cod-fishing was poor all through the season. At the Magdalen Islands the catch was also poor, being at least 5,000 cwt. below that of the preceding year. This was, however, altogether due to the striking in of the mackerel early in August, for as soon as the crews of the island cod-fishing vessels found that the shore boats were taking mackerel they abandoned the cod-fishery, and for the remainder of the season most of the vessels never left the harbor. The few that stuck to the bank fishing did well.

On the whole, the cod fishery in the Gulf Division was good. The spring was early and the summer fine; the fish struck in abundantly and much earlier than usual; they were taken up the Bay of Chaleur throughout the season, a thing that has not been done for years.

The cod-fishing fleet from Esquimaux Point did nothing. They left Natashquan just as the fish struck, and by the time they got down to Bonne Esperance the fishery was over.

HERRING.

Spring herring were abundant at Magdalen Island, over 70,000 lbs. being taken during the first spring tides of May. The bulk of these herrings were shipped to St. Pierre Miquelon, slightly salted, round and in bulk, to be used as bait for cod. A small quantity was taken to Prince Edwards Island and Nova Scotia for lobster bait. The run of large, fat summer herring, which usually comes on in August, failed completely. Herring as bait for cod was, over most of the coast, fairly abundant during the summer. This bait is used when obtainable after capelin, and before squid. Fat fall herring were not by any means abundant; in fact, they only struck the coast at a few points, and did not remain long.

It is now the pretty general impression that the practice of seining and netting spring herring in enormous quantities for manure, before they have spawned, is ruining the herring fishery. It was, until quite recently, the generally accepted opinion that nothing that man could do, either in the time or manner of capture, would make any impression on the bulk of the herring in the sea; but judging by our experience along the coasts of the river and Baie des Chaleurs, this idea can no longer be held. It is certain that our summer and fall herring fishery is failing, and the only cause for this failure is the enormous destruction of herring in the spring for manuring purposes. The fall herring fishery has so greatly fallen off that along the greater part of the Gulf coast there are now barely enough taken for local consumption.

Fall herring struck on the coast of Labrador early in August, and remained only a few days. The herring fleet from Esquimaux Point only arrived at Bras d'Or Bay after the herring had passed. The vessels crossed to the west coast of Newfoundland, but never fell in with the herring, and were obliged to return home with only an average of 50 barrels per vessel.

Complaint is made by the masters of these vessels that, when on the coast of Newfoundland, they were compelled to pay duty on the salt and barrels they had on board for their own use in the prosecution of their fishery, which articles were not

landed in Newfoundland, and were not used for purposes of trade. On hearing of this complaint I communicated with Mr. D. B. McGie, Collector of Customs at Esquimaux Point, for information as to the actual facts. His reply was as follows:—

"21st November, 1889.

"SIR,—I am in receipt of your favor of the 18th inst. Reverting to same, I beg to state that the captains held no receipts for the amounts they paid to the Newfoundland collector, but on each clearance was mentioned 'Duty paid by order.' Did not mention how much; nineteen vessels from Esquimaux Point paid duty on salt and barrels they had on board for their fishing voyage, and which they brought back to Esquimaux Point. One vessel from Natashquan, Captain Bourke, I was told, paid $16 cash on his salt, barrels and sealing guns. The captains state that they went to the collector at Flower's Cove, Newfoundland, to enter, and he told them 'that their fishing licenses were all right; to go and fish; that there was nothing to pay.' But there came an official from Bonne Bay, by the name of Kelly, who ordered them to go again to the collector to pay their duty and clear, or else he would seize their vessels. Enclosed you will find the names of the vessels and the captains who paid duty."

"I am, yours, etc.,
"D. B. McGIE, *Collector*."

I have also written to Mr. Whitely, fishery officer for the Bonne Esperance subdivision, who is wintering in St. John's, Newfoundland, to have him find out the reason for this unusual treatment of our fishing vessels, but up to the date of closing this report I have had no answer.

MACKEREL.

Excepting at Magdalen, Islands this fishery was a complete failure. The Baie des Chaleur, Port Daniel Bay, Gaspé Bay and Islands Bay, each of which were a one time favorite haunts of the mackerel, were this past season almost entirely abandoned by them, only a few straggling fish being taken. At Magdalen Islands, however, the fishery was better than it has been for some years, the shore boats having taken 4,600 barrels. The fish first showed about the 1st of August; they, however, kept to the bottom, did not school, and never took the bait very freely, A fleet of twenty-five United States fishermen arrived off the Islands about the 16th of August, and remained on the grounds until the 20th of October. Most of them took their fish with the "bob," or brought the fish to the surface with "toll bait," and then shot the seine around them. There is no doubt that the shore fishery would have been much better had it not been for the disturbance caused by these seines. It was the general opinion that there was a considerable body of fish in the Gulf, but they did not show at the surface. Wherever mackerel were taken they were of unusual size and fatness. Prices ran high, some of the inland fishermen getting as much as $28 per barrel.

LOBSTERS.

The total quantity of lobsters packed this season amounts to 593,950 lbs., being an increase of 52,663 lbs. over the product of 1888. This increase took place at Magdalen Islands, where 329,412 lbs. were canned, as against 257,380 lbs. in 1888, giving the considerable increase of 72,032 lbs. There were no more canneries, but a good many more traps were fished, and owing to an early spring, the season was longer; so that the increased yield was due to a greater number of traps, and to a longer and more favorable season, rather than to any improvement in the fishery. On the mainland of Gaspé and Bonaventure the take shows a decrease of 10,519 lbs. This is altogether attributable to the fact that cod struck in abundantly after the middle of May; and, as it paid better to fish for cod than for lobsters, it became difficult, and in some places impossible, to get men to attend the traps. Some of the larger factories, owing to this cause, closed down in June. Had it not

been for this interruption to the fishery we would, without doubt, have had a considerable increase in the mainland output.

In view of the fact that the artificial propagation of lobsters seems to have been successfully carried out in Newfoundland by Mr. Nielson, and at a small cost, it is the opinion of those engaged in the lobster industry that your Department should try the same thing here. As the eggs are fertilized within the body of the mother, it would only become necessary to detach them from her, when taken in the trap. They are then subjected to the action of running sea water into jars for a longer or shorter period, which depends upon their ripeness when detached. When hatched out, it is necessary to feed them for a few weeks. After this they may be liberated, and will take care of themselves. The shoal waters of the lagoons at Magdalen Islands, and inside many of the barachois on the mainland, would seem to offer splendid natural nurseries for these young fish. These ponds should be distinctly set apart for this purpose.

SEALS.

The number of seals killed amounts to 26,333, yielding 160,630 gallons of oil. These seals were taken by the fleets from Magdalen Islands, Esquimaux Point and Natashquan, with the exception of about 7,000, which were caught in the sedentary seal fisheries, or from shore, on the ice. The Magdalen Island vessels average about 300 seals. The six small vessels from Natashquan took an average of 888 seals, some of them even taking a second load of large seals. The 22 vessels from Esquimaux Point missed the seals as they did the cod and the herring, and only averaged 80 seals apiece. The result of these repeated failures was, that supplies had to be sent to the people of Esquimaux Point in the fall by the Local Government, as they could no longer get the necessary advances to tide them over the winter.

SMELTS.

The yield of smelts for the past season amounts to 171,160 lbs., or 95,994 lbs. more than last year. Of this, 30,300 lbs. were taken last winter in the estuary of the Restigouche with bag nets, under the ice, leaving 140,860 lbs. as the result of seine fishery this fall on that part of the coast between Gaspé and Port Daniel. This seining began on the 15th October, at which date permission was given by your Department to seine. The fishery closed on the 20th November, the day on which the steamer "Admiral" made her last trip from Gaspé to Dalhousie. Smelts were more abundant at the close of the fishery than they were when it began, as it is not until the middle of November that they begin to push into the estuaries and channels. As there was, when the "Admiral" had made her last trip, no other means of shipping the fish to market, the fishery had to be abandoned, and this condition of affairs must exists so long as the Peninsula of Gaspé is without railway communication.

The total quantity shipped is insignificant, and as long as the fishery is confined to the season between the beginning of October, when the fish first come in, and the end of November, when communication by water with Dalhousie ends, there can be no fear of the smelts being exhausted. It seems reasonable, in view of the exceptional position of the people of this coast, as regards the means of transport to market after the close of navigation, that a change be made in the fishing season for smelts along that part of the coast between Port Daniel Bay and Cape Gaspé.

BAIT.

During the early part of the fishing season bait was fairly abundant; but in summer, and before the advent of the squid, herring—then, over all that part of the coast where clams and launce are not obtainable—the only bait to be had, was scarce. A good deal of discontent is felt along the coast at the order prohibiting the seining of smelts, except under special licenses, as in the fall, when the squid has passed, and herring is not to be had, smelt is the only avilable bait. It is never used when anything else can be had, as it is too soft and delicate to make good bait.

There can be no doubt that the principal bait fishes, such as capelin and herring, are becoming scarce. At one time, when the inshore cod fishery was at its best, capelin struck in abundance all along the coast, and the first run of cod was known as the capelin school; and as long as this run lasted—generally about three or four weeks—there was a good spurt of fishing. This state of things now no longer exists. The capelin school does not strike all along shore, and with the exception—on the south shore—of a few points, such as Paspebiac and Newport, it is hardly ever seen. The only visible cause for this decrease would seem to be the practice, which has existed on the coast from time immemorial, of taking these fish in enormous quantities for manure, when they first strike the coast for the purpose of spawning. The question is one which should receive the attention of your Department, for nothing can be more certain than the dependence of the cod upon the bait.

I beg to append synopses of the reports of the local officers.

I have the honor to be, Sir,
Your obedient servant,

WM. WAKEHAM.

SYNOPSES OF FISHERY OVERSEERS' REPORTS.

RESTIGOUCHE SUB-DIVISION.

Overseer J. A. Verge reports an improvement in the take of salmon in nets on the Quebec side of the Restigouche for the season of 1889, the yield being 52,880 lbs., an increase over last year of 3,748 lbs. There was no heavy run of salmon at any time, but a steady regular daily catch. Fishermen believe that their fishing was greatly damaged by the working of the dredge "St. Lawrence" between Campbellton and Dalhousie. The season was an early and exceptionally fine one, and the close time was fully and regularly observed. Smelt fishermen are increasing in number, but they have not been able to track the smelt under the ice; many more smelt would be taken if the grounds which they frequent were known.

CARLETON SUB-DIVISION.

Overseer Peter Cyr reports salmon fishing poor; only 37,805 lbs. were taken in the 28 salmon stations of his division. Cod was very abundant, more so than it has been for many years, but owing to the scarcity of bait the catch was not proportionately great.

BONAVENTURE SUB-DIVISION.

Overseer John L. Smith reports that salmon fishing with nets has been a failure in his division. Fly-fishing on the Bonaventure was good. Only one lobster factory was open, and in proportion to the number of traps fished the take was good. Spring herring were abundant at Paspebiac and New Carlisle, but scarce elsewhere. The summer catch of cod was good but bait was scarce, and fishermen had to use clams. Fall fishing was above the average. Small herring struck in about the 10th of October, giving plenty of bait; boats at Bonaventure and Paspebiac landed as much as 40 drafts of cod a week. Capelin were plenty at Paspebiac for a week in the spring, but never struck above. Summer herring and mackerel were a failure. No smelts were taken in this division.

PORT DANIEL SUB-DIVISION.

Overseer John Phelan reports that, taking the fishery all in all, he has to record the most successful season that has been seen for many years. Salmon fishing began on the 20th May and ended on the 29th July; the yield is a trifle less than last year,

but this is attributable to a change of fishermen which took place on some of the stands, as it is with them that the shortage appears. Most of the old fishermen exceeded last year's catch. The run of salmon was large, some being taken of 50 lbs. Cod fishing began on the 29th May with a large catch, the result being a much larger spring catch than usual. In July bait became scarce, and the fishing fell off. The falling off was not so great at Port Daniel as at other places, as it was there possible to get clams for bait. The fall fishing of squid and herring shows the largest catch that has been made for years. Lobster fishing began on the 3rd of May, or about two weeks earlier than usual. The increase in the catch is partly due to a longer season, and to the increased number of traps, but the lobsters are showing signs of improvement, the general run this season being large. Spring herring were abundant in May, hundreds of barrels being taken for manure and lobster bait. Fall herring afforded plenty of bait and a fair supply for local consumption, but the fish were very small and chiefly taken with seines. Cod fishing was carried on until the close of November. A few small schools of mackerel were seen, but none taken. There was no capelin taken in Port Daniel Bay. Smelt fishing was better than last year. When the fishermen at Port Daniel found that permission had been granted to the Gaspé fishermen to seine smelt they began to fish as well, and it was with great difficulty that they were compelled to desist and await similar permission. This was the only breach of the Fisheries Act that came under Mr. Phelan's notice.

MONT LOUIS SUB-DIVISION.

Overseer Jos. Lemieux reports salmon fishing poor along the coast from Gaspé to Mont Louis. Cod struck early and in abundance, but in July bait gave out altogether. Fish were abundant until December, but owing to rough weather and scarcity of bait after August fall fishing was a failure. However, in spite of these drawbacks, the fishery is above the average of recent years. This was entirely due to the early and abundant spring catch. No mackerel was seen. Herring were plenty in May and June, but scarce during the rest of the season. The white porpoises did not put in an appearance this season.

STE. ANNE DES MONTS SUB-DIVISION.

Overseer J. I. Letourneau reports the summer cod fishing as a little better than last year, but owing to the scarcity of bait, the occasional raids of the white porpoises, and the fact that the people are turning their attention more to farming than to fishing, the catch continues small. Fish were abundant in the fall, but bait continued scarce, and the weather unusually rough. Only one salmon net was set at Rivière Marthe, and one at Cap Chatte, all the other licenses having either been cancelled or abandoned. Fly-fishing in Ste. Anne's River was poor, owing to the state of the water, which was too clear and low to give good sport. Herrings were scarce. No makerel were taken, though a few schools were seen off shore. Capelin were scarce, none at all having been taken at St. Anne's.

GODBOUT SUB-DIVISION.

Overseer N. A. Comeau reports salmon net fishing as good; the yield being 43,250 lbs., as compared with 32,626 lbs. in 1888. Fly fishing was hardly up to the average of recent years, the water keeping low in the rivers. The cod fishery was at times good, the yield better than last year, but the season on the whole was poor, much time being lost owing to the scarcity of bait, and heavy weather. A few schools of mackerel were seen in Godbout Bay, but none anywhere else in this division. Small fat herring were plentiful in the fall about Egg Island and Godbout Bay.

MOISIE SUB-DIVISION.

Overseer T. Migneault reports that salmon net fishing began in Moisie River on the 18th May. The fishery in the river was good, but the nets on the sea shore in Moisie Bay did badly, several of them being carried away by a gale during the middle of

the fishery. Fly fishing was good, there having been taken 404 fish, weighing in all 9,000 lbs. Cod fishing, both during the summer and fall, was poor. Herring were abundant during the fall in the western part of this division. Two Nova Scotia mackerel schooners arrived in Seven Islands Bay during the last days of July. There being no mackerel seen on this part of the north shore, they returned to the south on the 8th of August.

MINGAN SUB-DIVISION.

Overseer G. L. Duguay reports an increase in the quantity of salmon taken, especially in the estuaries of the St. John and Magpie rivers. Cod fishing was also above the average of recent years, in spite of the fact that the Esquimaux Point vessels did nothing. The bulk of the fish was taken in July and August. Owing to constant rough weather the fall fishing was poor. The 22 sealing schooners from Esquimaux Point did badly at the ice, not averaging more than 80 seals apiece. On their return from the ice fields they fitted out for the cod fishery, from which they returned with not more than 1,300 cwt. of cod altogether. They again fitted out for the fall herring fishery in the Straits, but missed the herring, and returned with only 1,000 barrels among the fleet, or an average of about 45 barrels per vessel. The consequence is, that merchants who were in the habit of advancing these people, have refused to do so any longer, the fact being that they have been losing by them for years.

NATASHQUAN SUB-DIVISION.

Overseer Geo. Gaudin reports a large deficiency in the salmon fishery of his division. This he attributes not to any decrease in the salmon, but to the prevalence of heavy gales and boisterous weather during the month of June, which scattered the fish and caused them to keep off shore. Several of the nets were either carried away or damaged, or rendered useless, and fishermen being poor were not able to replace them at once. The cod fishery was much better than for the three preceding years. The season was short, lasting only from the 22nd June, to 20th July. The fishermen, however, took full advantage of it, and did well. During the remainder of the season several boats made successful trips to the banks off Kegashka. A few herring were taken in the spring, but the fall fishery was a failure. The seal fishery has been the most important of the year, one of the six small schooners that were engaged in it having taken 2,160 seals. Some of the schooners made a second trip, and all of them did well. These small vessels of only 20 tons averaged 888 seals, most of those taken during the second trip being large seals. Every family at Natashquan had a share in this fishery, so that with the cod caught later on they were all for the time well off.

WASHEECOOTAI SUB-DIVISION.

Overseer G. Mathurin reports a failure all round. The salmon only began to run into the rivers as the season was closing. Cod struck in for a day or two off Romaine, but lasted no time and never showed again. The fleet from Esquimaux Point remained some time between Romaine and Coacoachoo, but did nothing, and continued further down the coast. A lobster factory was opened to the westward of Beacon Island, but they only canned about 7,000 lbs. of lobsters. The big factory put up by some Nova Scotains at Wolf Bay has been abandoned.

ST. AUGUSTIN SUB-DIVISION.

Overseer J. Legouvè reports salmon fishing a failure, there having been taken only 116 barrels in the 50 stations comprised in this division. In a fair year the yield should be at least 250 barrels. Cod fishing was again poor, though slightly better than last year. The bulk of the fish were taken in deep water by fishermen of Mutton Bay and Harrington. Bait was always short, as the capelin never come

inshore in quantity. A few herring were taken with seines during the month of September, at Harrington and Meccatina. The sedentary seal fishery, made with nets in the month of December was much below the average, the return giving only 1,151 seals, as compared with 3,356 the previous year.

BONNE ESPERANCE SUB-DIVISION.

Overseer W. H. Whitely reports salmon fishing a failure. The weather was fine and the spring early, but from some unaccountable cause the run of fish only began as the season was closing. The same occurrence has been noticed here before, in former times, when the nets used to be kept out during the month of August. Codfish was fair—that is, slightly below a good average. The season began on the 22nd June. Fish were taken with hook and line in deep water. The fishery was entirely over by the 15th July, and nothing was done after that. The sedentary seal fishery, which in this division is made in the spring as the seals are passing out, through the straits, was again poor, owing to the very early disappearance of the ice. The cod fishing vessels began moving into the bays and runs early in May. This shied the seals off, and spoilt the fishery. Fall herring struck in during the early part of August. They did not remain more than a few days on the coast, and a small catch was made. Very few vessels from Newfoundland and Nova Scotia visited the coast, and none of them remained any length of time. They all kept on down north after the fish. One United States mackerel seiner, the "Emma C. Brown," called at Bonne Esperance during the month of August. Finding no mackerel here, she ran down to Red Bay in the Straits, and filled up with fall herring.

APPENDIX No. 6.—Continued.

QUEBEC.

FISHERY STATISTICS, GULF OF ST. LAWRENCE.

RETURN showing the Number and Value of Vessels, Boats and Fishing Materials, **County of Bonaventure,** Province

RISTIGOUCHE SUB-DIVISION

NAME OF PLACE.	NUMBER OF VESSELS EMPLOYED IN FISHING.							FISHING MATERIAL.					
	Vessels.				Boats.			Nets.		Seines.		Trap-Nets.	
	Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Fathoms.	Value.	Fathoms.	Value.	Number.	Value.
			$			$			$		$		$
Estuary of the Ristigouche, Quebec side	..	.....	.....	..	23	230	23	7420	7420	.....	.....	11	275

CARLETON SUB-DIVISION

Maguasha	..	.....	.....	..	20	400	60	1500	750	.....	.....	....	....
Nouvelle	..	.....	.....	..	40	800	120	2500	1250	.....	.....	....	....
Carleton	..	.....	.....	..	100	2000	300	3500	1750	1500	500	....	....
Maria	..	.....	.....	..	140	2800	420	10600	5300	1500	500	....	....
Total	..	.....	.....	..	300	6000	900	18100	9050	3000	1000	....	....

BONAVENTURE SUB-DIVISION

New Richmond	..	.....	.....	..	30	420	24	992	468	.....	.....	....	....
Black Capes	..	.....	.....	..	26	250	20	1800	1200	.....	.....	....	....
Capelin	..	.....	.....	..	135	1410	80	5625	2500	125	75	....	....
Bonaventure	..	.....	.....	..	200	2700	120	6850	3200	1000	600	....	....
New Carlisle	..	.....	.....	..	45	460	45	1062	900	480	400	....	....
Paspebiac	7	330	6500	33	100	1450	180	3120	1690	450	320	....	....
Total	7	330	6500	33	536	6690	469	19449	9958	2055	1395	....	....

PORT DANIEL SUB-DIVISION

Paspebiac	..	.....	.....	..	35	1600	50	1280	660	200	280	....	....
Nouvelle and Shigawake	..	.....	.....	..	72	3420	120	3200	1400	140	270	....	....
Point Loup-Marin	..	.....	.....	..	65	800	70	1000	840	100	160	....	....
Port Daniel Bay	..	.....	.....	..	60	4000	100	3440	2400	120	200	....	....
L'Anse à la Barbe	..	.....	.....	..	33	1580	60	1200	620	60	100	....	....
L'Anse à Gascon	..	.....	.....	..	66	3460	120	2300	1350	200	400	....	....
Total	..	.....	.....	..	331	14860	520	12420	7270	820	1410	....	....

TOTAL FOR COUNTY

Ristigouche Sub-division	..	.....	.....	..	23	230	23	7420	7420	.....	.....	11	275
Carleton do	..	.....	.....	..	300	6000	900	18100	9050	3000	1000	....	....
Bonaventure do	7	330	6500	33	536	6690	469	19449	9958	2055	1395	....	....
Port Daniel do	..	.....	.....	..	331	14860	520	12420	7270	820	1410	....	....
Total	7	330	6500	33	1190	27780	1912	57389	33689	5875	3805	11	275

the Number of Men Employed, with the Kinds and Quantities of Fish, &c., in the of Quebec, for the Year 1889.

(Tide Head, Ristigouche, to Maguasha).

Kinds of Fish.									Fish Products.				Value.
Smelt, lbs.	Salmon, fresh, lbs.	Cod, cwt.	Haddock, cwt.	Herring, barrels.	Herring, smoked, boxes.	Eels, barrels.	Cod Tongues and Sounds, barrels.	Lobsters, in cans, lbs.	Cod Oil, gallons.	Fish used as Bait, barrels.	Fish used as Manure, barrels.	Fish use for Local Consumption, barrels.	
													$ cts.
30300	52880	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	12,091 00
(Maguasha Head to Big Cascapedia).													
.....	8000	.....	.....	50	.....	.....	....	.....	.....	10	1500	330	3,885 00
.....	7500	1000	.....	140	.....	.....	....	.....	800	50	2300	400	9,205 00
.....	12000	1000	.....	150	.....	40	....	.....	820	60	7000	400	12,918 00
.....	10305	1575	.....	210	400	60	....	.....	1280	80	8000	900	18,133 00
.....	37805	3575	.....	550	400	100	....	.....	2900	200	18800	2030	44,141 00
(Big Cascapedia to Paspebiac Point).													
.....	6969	100	.....	25	100	.....	....	.....	40	20	400	300	3,364 80
.....	8650	175	.....	50	75	.....	....	.....	70	25	900	500	5,164 25
.....	.....	640	.....	200	150	.....	....	.....	300	220	1950	600	7,222 50
.....	515	1725	.....	400	300	.....	....	17516	800	395	4000	1000	17,692 42
.....	915	750	15	20	100	.....	....	.....	300	115	3000	500	7,140 50
.....	.....	2600	200	300	200	.....	....	.....	1500	540	7000	800	20,560 00
.....	17049	5990	215	995	925	.....	....	17516	3010	1315	17250	3700	61,144 47
(Paspebiac Point to Point Macquereau).													
.....	200	1550	20	50	.....	.....	5	.....	1200	500	500	150	8,650 00
.....	200	1700	.....	150	.....	.....	....	36000	1500	600	600	300	14,760 00
.....	.....	1200	.....	40	.....	.....	....	.....	1000	400	400	150	6,760 00
19000	20200	1600	20	50	.....	.....	....	35388	1500	500	650	250	18,591 56
.....	2300	1500	.....	65	.....	.....	....	.....	1000	500	400	150	8,670 00
.....	750	2500	20	65	.....	.....	10	8000	2000	750	300	250	14,625 00
19000	23650	10050	60	420	.....	.....	15	79388	8200	3250	2850	1250	72,056 56
OF BONAVENTURE.													
30300	52880	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	12,091 00
.....	37805	3575	.....	550	400	100	....	.....	2900	200	18800	2030	44,141 00
..	17049	5990	215	995	925	.....	....	17516	3010	1315	17250	3700	61,144 47
19000	23650	10050	60	420	.....	.....	15	79388	8200	3250	2850	1250	72,056 56
49300	131384	19615	275	1965	1325	100	15	96904	14110	4765	38900	6980	189,433 03

RETURN showing the Number and Tonnage of Vessels, Boats and Fishing Materials, **County of Gaspé**, Province

GASPÉ SUB-DIVISION

NAME OF PLACE.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.			
	Vessels.				Boats.			Nets.		Seines.	
	Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Fathoms.	Value.	Fathoms.	Value.
			$			$			$		$
Black Point					12	250	20	300	180		
Newport					17	770	25	490	200		
Anse à Blondel					20	2000	60	800	400	30	20
Newport Point					30	1700	90	1800	800		
Anse aux Canards					17	500	34	400	160		
Grand Pabos					20	1420	40	800	360	60	45
Anse aux Basques					33	2520	66	1300	650	60	50
Little Pabos					6	480	12	360	200	30	30
Little River, West					20	1200	45	800	400	25	30
Grand River					135	9740	325	4625	2825	175	180
Little River, East					29	1470	58	1220	600	50	35
Cape Despair					21	830	37	740	370	90	60
Cape Cove	1	36	500	4	44	3630	88	1960	880	125	136
Anse au Beaufils					28	1400	54	1080	540	50	60
Bonaventure Island					67	2680	134	4824	2680		
Percé					127	7705	254	7070	2740	100	235
Corner of the Beach	2	110	1800	8	10	500	20	400	200	150	150
Barachois	2	174	5000	10	48	2400	101	1920	960	300	400
Belle Anse					8	480	16	900	450	30	15
Malbaie					30	1900	60	1480	740	30	20
Chien Blanc and Red Head					35	1750	75	1830	915	115	200
Point St. Peter	1	80	1600	6	65	3900	130	2700	1350	130	200
Anse Brilliante and Seal Cove					28	920	46	380	300	30	30
Douglastown	2	170	5000	12	50	1750	70	1160	580	120	100
Haldimand and Sandy Beach	2	130	4000	10	20	600	38	2150	1500	60	50
Gaspé, North and South	2	125	2500	10	60	600	60	4000	2100	300	350
Peninsula					17	300	20	1500	1200		
Cape aux Os					12	280	24	2000	1000		
Little Gaspé	1	50	700	5	14	230	28	540	400		
Grand Grève	2	150	4000	13	26	601	52	1000	500	250	200
St. George's and Indian Cove					20	500	40	750	450		
Ship Head	2	100	2000	10	24	550	48	400	250	25	25
Total	17	1125	27100	88	1093	55556	2170	51679	26880	2335	2621

the Number of Men Employed, with the Kinds and Quantities of Fish, &c., in the of Quebec, for the Year 1889.

(Point Macquereau to Cape Gaspé).

Kinds of Fish.											Fish Products.				Value.
Smelt, lbs.	Salmon, fresh, lbs.	Cod, cwt.	Haddock, cwt.	Halibut, lbs.	Herrings, barrels.	Herrings, smoked, in boxes.	Trout, barrels.	Eels, barrels.	Cod Tongues and Sounds, barrels.	Lobsters, in cans, lbs.	Cod Oil, gallons.	Fish used as Bait, barrels.	Fish used as Manure, barrels.	Fish used for Local Consumption, barrels.	$ cts.
.....	.....	380	....	....	....	....	....	....	....	.....	380	150	....	50	2,097 00
.....	625	775	....	....	....	....	....	....	....	11356	775	320	....	115	5,837 72
.....	.....	1500	....	....	....	....	....	....	....	9920	1500	500	....	100	8,940 40
.....	546	3200	100	....	40	....	....	....	10	.....	3000	900	....	150	16,719 20
.....	1344	600	....	....	20	....	....	....	....	.....	500	400	....	75	3,848 80
20000	6000	1860	....	....	300	20	....	....	....	5472	1750	450	....	100	13,276 64
.....	.....	2910	....	....	....	....	....	....	....	.....	2600	620	....	125	14,110 00
.....	2449	600	....	....	....	50	....	....	3	.....	600	180	....	25	3,542 30
.....	.....	1800	....	600	....	40	....	....	....	18768	1800	500	40	200	11,812 16
.....	2300	10080	....	....	4	....	....	....	1	5400	9747	3525	....	965	54,500 30
.....	.....	2780	....	....	30	....	....	....	2	.....	2780	750	....	285	14,637 00
.....	.....	1750	....	....	....	....	....	....	....	31008	1750	250	....	100	12,195 96
.....	300	4010	....	....	....	....	....	....	5	.....	3760	1205	....	360	20,901 50
.....	.....	2550	....	....	....	....	....	....	....	.....	2500	750	....	250	13,325 00
.....	.....	5444	4	....	....	....	....	....	....	3300	5000	1100	....	400	27,438 00
.....	.....	10485	....	....	50	....	....	....	....	13296	9650	4025	....	780	56,753 02
.....	2444	1000	....	....	....	....	....	....	....	11856	1000	250	....	50	6,886 52
15000	8981	3500	....	2000	....	....	....	....	4	.....	3500	950	1400	250	21,311 20
.....	.....	560	....	....	....	....	....	....	....	12000	475	240	1000	32	4,858 00
.....	2207	2100	....	....	60	....	....	....	....	.....	1750	900	....	120	11,611 40
.....	.....	1750	....	....	20	....	....	....	....	9012	1500	1050	....	140	10,896 44
.....	.....	5200	....	....	30	....	....	....	....	7200	4500	1950	....	260	27,549 00
.....	.....	1000	....	....	40	....	....	....	....	11904	720	360	....	100	6,816 48
.....	4162	1400	....	....	40	....	....	....	....	.....	1200	700	....	300	9,322 40
.....	11902	500	....	....	....	....	....	....	....	.....	400	200	....	100	5,240 40
86860	22171	100	....	....	....	....	60	20	....	.....	70	20	....	160	10,675 20
.....	14100	110	....	....	20	....	....	....	....	.....	70	25	....	120	3,885 50
.....	.....	240	....	....	25	....	....	....	....	9792	150	120	....	60	2,715 04
.....	6150	490	....	....	10	....	....	....	....	.....	300	140	....	30	3,680 00
.....	5350	1500	....	....	16	....	....	....	....	.....	950	260	....	50	8,104 00
.....	.....	950	....	....	10	....	....	....	....	.....	750	250	....	40	4,675 00
.....	.....	1,000	....	....	....	....	....	....	....	.....	750	300	....	30	4,870 00
121860	91031	72124	104	2600	715	110	60	20	25	160284	66177	23340	2440	5922	423,031 58

RETURN showing the Number and Value of Vessels, Boats

MAGDALEN RIVER SUB-DIVISION

NAME OF PLACE.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.					
	Vessels.				Boats.			Nets.		Seines.			
	Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Fathoms.	Value.	Fathoms.	Value.	Salmon, brls.	Salmon, fresh, lbs.
			$			$			$		$		
Cap Rosiers	....	....	....	....	220	2220	224	2760	3700	160	250	....	....
Griffin Cove	....	....	....	....	150	3030	170	2780	3000	140	175	....	850
Fern Cove	....	....	....	....	6	85	8	100	45	....	....	....	....
Fox River	....	....	....	....	115	3300	161	3125	2090	180	250	....	....
Little River	....	....	....	....	26	470	38	525	350	....	....	....	....
Little Cape	....	....	....	....	28	470	38	600	320	....	....	....	....
Grand Anse	....	....	....	....	6	50	8	120	48	....	....	....	....
Echourie	....	....	....	....	13	225	20	255	105	....	....	....	....
Anse à Valeau	....	....	....	....	24	360	41	530	190	....	....	....	....
Grand Etang	....	....	....	....	25	480	25	554	430	120	140	....	....
Pointe Sêche	....	....	....	....	125	1000	130	2000	1000	....	....	....	....
Chlorydorme	....	....	....	....	125	2400	130	2080	1050	....	....	....	....
Grand Vallée	....	....	....	....	35	605	37	230	450	100	200	....	..
Magdalen River	....	....	....	....	26	295	27	300	260	30	35	8	800
Mont Louis	....	....	....	....	70	1125	78	1621	820	130	65	12	2000
Claude	....	....	....	....	18	540	35	400	200	....	....	....	....
Totals	....	....	....	....	1012	16655	1170	17980	14058	860	1115	20	3650

and Nets, &c., in the **County of Gaspé**, &c.—*Continued.*

(Cape Gaspé tc Claude River.)

Kinds of Fish.									Fish Products.								Value.
Cod, cwt.	Haddock, cwt.	Halibut, lbs.	Herring, brls.	Mackerel, brls.	Trout, brls.	Cod Tongues and Sounds, barrels.	Lobsters, in cans, lbs.	Course and Mixed Fish, barrels.	Seal Skins, No.	Porpoise Skins, No.	Seal Oil, galls.	Porpoise Oil, galls.	Cod Oil, galls.	Fish used as Bait, brls.	Fish used as Manure, barrels.	Fish used for Local Consumption, barrels.	$ cts.
4700	....	2000	275	....	....	20	....	....	....	....	....	....	2250	575	100	320	23,392 50
2300	....	4000	50	....	....	....	....	....	....	....	....	....	1800	285	100	90	11,527 50
100	....	300	4	....	....	....	....	....	....	....	....	....	70	11	....	8	522 50
4300	....	8000	60	....	....	....	....	....	8	1	24	....	2500	405	150	250	20,940 10
600	....	1000	15	....	....	....	....	....	....	....	....	....	380	48	....	20	2,864 00
600	....	800	18	....	....	....	....	....	....	....	....	....	380	45	....	30	2,891 50
150	....	250	5	....	....	....	....	....	....	....	....	....	90	15	....	10	743 50
280	....	250	6	....	....	....	....	....	....	....	....	40	200	28	....	20	1,387 00
665	....	750	16	....	....	....	....	....	....	....	....	....	235	39	75	30	3,109 00
1250	....	1700	8	....	....	3	....	....	....	....	....	....	1220	128	50	30	6,057 00
1400	....	.....	....	....	....	....	....	....	....	....	....	....	1200	100	50	150	6,855 00
2900	....	.....	150	....	....	....	....	....	....	....	....	....	2200	200	100	200	14,230 00
850	....	.....	10	....	3	....	....	....	....	....	....	....	500	108	...	125	4,332 00
350	....	1500	5	....	....	....	....	....	....	....	....	....	200	142	50	30	2,296 00
1468	....	2000	40	....	5	....	....	....	....	....	....	....	1000	500	150	160	8,739 00
200	....	.....	65	....	3	....	....	....	....	....	....	....	115	45	150	50	1,478 50
22113	....	22550	727	....	11	23	....	....	8	1	24	40	14340	2674	975	1523	111,365 10

RETURN showing the Number and Value of Vessels, Boats and

ST. ANNE DES MONTS SUB-DIVISION

NAME OF PLACE.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.									
	Vessels.				Boats.			Nets.		Seines.		Trap-nets.		Smelt, lbs.	Salmon, barrels.	Salmon, fresh, lbs.	Cod, cwt.
	Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Fathoms.	Value.	Fathoms.	Value.	Number.	Value.				
			$			$			$		$		$				
Martin River	..	....	.....	....	5	200	10	150	113	....	....	..	....	.....	4	.....	171
Marsouïs	..	....	.....	...	8	325	16	200	170	...	....	..	....	.....	..	.....	325
Ste. Ann's	2	120	2600	9	39	1750	74	1802	1760	256	98	..	....	.....	..	2080	1930
Cape Chatte	1	45	200	4	28	1150	50	730	550	106	60	..	....	....	2	120	650
Total	3	165	2800	13	80	3425	150	2882	2593	362	158	..	....	.....	6	2200	3076

MAGDALEN ISLANDS

Amherst Island	4	138	3950	27	130	3610	312	18192	8522	720	1075	1	350	.....	..	.....	6100
Grindstone do	8	352	1270	80	73	4380	219	3136	1434	880	960	..	....	.....	..	.....	5410
Allright do	14	551	19050	114	63	1260	168	2094	840	240	120	..	....	.....	..	.....	615
Bryon do	..	...	.....	....	12	240	24	250	96	....	....	..	....	.....	..	.....	250
Entry do	..	....	.....	....	8	160	18	400	160	....	....	..	....	.....	..	.....	15
Grosse Isle and Grand Entry	..	....	.....	....	65	1300	153	912	386	....	....	..	....	.....	..	.....	68
Total	26	1041	35700	221	351	10950	894	24984	11438	1840	2155	1	350	.....	..	.....	12458

TOTAL FOR THE

Sub-divisions—																	
Gaspé	17	1125	27100	88	1093	55556	2170	51679	26880	2335	2621	..	....	121860	..	91031	72124
Magdalen River	..	....	.....	....	1012	16655	1170	17980	14058	860	1115	..	....	.....	20	3650	22113
Ste. Ann's	2	165	2800	13	80	3425	150	2882	2593	362	158	..	....	.....	6	2200	3076
Magdalen Isl'ds	26	1041	35700	221	351	10950	894	24984	11438	1840	2155	1	350	.....	..	.....	12458
Totals	45	2331	65600	322	2536	86586	4384	97525	54969	5397	6049	1	350	121860	26	96881	109771

Fishing Materials, &c., in the **County of Gaspé**, &c.—*Concluded.*

(Martin River to Cape Chatte.)

Kinds of Fish.									Fish Products.								Value.
Haddock, cwt.	Halibut, lbs.	Herring, barrels.	Herring, smoked, boxes.	Mackerel, barrels.	Trout, barrels.	Eels, barrels.	Cod Tongues & Sounds, brls.	Lobsters in Cans, lbs.	Seal Skins, No.	Porpoise Skins, No.	Seal Oil, gallons.	Porpoise Oil, gallons.	Whale Oil, gallons.	Cod Oil, gallons.	Fish used as Bait, barrels.	Fish used as Manure, barrels.	Fish used for Local Consumption, barrels.	
																		$ cts.
.. .	800	30	....	....	1	..	..	.. ...	.....	..	.....	....	....	96	11	430	32	1,355 90
....	500	36	....	....	..	..	..	.. ..	.....	..	.....	....	....	112	18	315	20	1,803 30
....	2000	150	....	....	6	..	3	.....	.....	2	....	180	160	420	185	53	301	10,848 00
....	1200	250	....	....	2	..	1	.....	.. ...	..	.....	....	....	350	120	100	281	5,300 00
....	4500	466	....	...	9	..	4	.....	.....	2	.....	180	160	978	334	898	634	19,307 20

SUB-DIVISION.

1075	4200	12000	....	747	..	..	12	44160	1750	..	5820	...	....	3430	890	610	555	103,054 20
185	10000	2000	....	1513	..	..	10	93540	7400	..	63100	....	....	2800	1180	660	1000	105,259 80
96	.....	.....	....	1070	..	..	..	23616	2150	.	8600	....	....	340	950	630	550	31,393 92
10	.....	.....	....	190	..	..	..	32640	780	..	2300	....	....	125	280	....	30	10,096 80
4	.....	80	....	70	..	..	..	.....	.....	..	.....	....	....	10	40	....	100	1,910 00
....	.....	.....	....	1010	..	..	..	135456	33	..	125	....	....	34	1130	....	380	34,988 32
1370	14200	14080	....	4600	..	..	22	329412	12113	..	79945	....	....	6739	4470	1900	2615	286,703 04

COUNTY OF GASPÉ.

104	2600	715	110	....	60	20	25	160284	.....	..	.....	.. .	....	66177	23340	2440	5922	423,031 58
....	22550	727	....	....	11	..	23	.....	8	..	24	40	....	14340	2674	975	1523	111,365 10
....	4500	466	....	....	9	..	4	.....	.....	2	...	180	160	978	334	898	634	19,307 20
1370	14200	14080	....	4600	..	..	22	329412	12113	..	79945	....	....	6739	4470	1900	2615	286,703 04
1474	43850	15988	110	4600	80	20	74	489696	12121	2	79969	220	160	88234	30818	6213	10694	840,406 92

RETURN showing the Number and Value of Vessels, Boats and Fishing Materials, **County of Saguenay,** in the Province

POINT DES MONTS SUB-DIVISION

NAME OF PLACE.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.							
	Vessels.				Boats.			Nets.		Seines.		Trap-Nets.		Salmon, barrels.	Salmon, fresh, lbs.
	Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Fathoms.	Value.	Fathoms.	Value.	Number.	Value.		
			$			$			$		$		$		
Manicouagan	1	24	300	3	7	140	14	90	30	....	....	1	300	....	300
Godbout	1	24	600	4	12	250	16	900	450	500	750	....	....	....	9500
Point des Monts	....	....	....	....	5	100	5	650	325	60	50	....	....	....	3588
Trinity Bay	1	5	150	2	7	140	6	640	320	....	....	....	....	....	8825
Cariboo Islands	6	116	2600	15	17	340	16	600	300	....	....	....	....	....	13178
Egg Island	1	16	400	3	10	200	13	400	250	....	....	....	....	....	.....
English Bay	....	....	....	....	26	600	43	720	575	....	....	....	....	....	7759
Pentecost	1	11	75	2	5	150	10	230	125	....	....	....	....	....	100
Cailles Rouge	....	....	....	....	2	60	4	90	45	60	95	....	....	....	.....
Totals	11	196	4125	29	91	1980	127	4320	2420	620	895	1	300	....	43250

MOISIE SUB-DIVISION

Jambons	....	....	....	....	10	600	14	643	475	....	....	....	....	....	.....
Ste. Marguerite	....	....	....	....	2	75	4	556	508	36	28	....	....	....	3800
Seven Islands	2	31	800	7	19	157	35	1280	1050	152	150	....	....	....	7549
Moisie	....	....	....	....	17	1200	87	4903	4300	425	350	....	....	4	154353
Pigou	....	....	....	....	5	200	10	425	305	425	359	....	....	....	.....
Totals	2	31	800	7	53	2232	150	7807	6638	1038	887	....	....	4	165702

the Number of Men Employed, with the Kinds and Quantities of Fish, &c., in the of Quebec, for the Year 1889.

(Manicouagan to Jambons.)

Kinds of Fish.						Fish Products.							Value.
Cod, cwt.	Halibut, lbs.	Herring, barrels.	Mackerel, barrels.	Trout, barrels.	Cod Tongues and Sounds, barrels.	Seal Skins, number.	Porpoise Skins, number.	Seal Oil, gallons.	Porpoise Oil, gallons.	Cod Oil, gallons.	Fish used as bait, barrels.	Fish used for Local Consumption, barrels.	$ cts.
.....	.....	.....	.....	.....	.....	30	1	180	60	.....	.....	10	231 00
268	1515	91	2	6	.....	92	1	552	70	134	7	15	4,047 40
123	2750	48	.....	2	.....	140	.....	840	.....	62	4	9	2,239 40
104	.....	11	.....	.....	.....	.....	.....	.....	.....	52	4	6	2,275 80
1535	8915	126	.....	.....	.....	.....	.....	.....	.....	773	152	31	10,832 30
55	3500	95	.....	.....	.....	.....	.....	.....	.....	23	2	7	990 20
1463	450	147	.....	.....	.....	.....	.....	.....	.....	732	148	60	8,791 60
62	.....	17	.....	1	.....	.....	.....	.....	.....	31	2	20	441 40
25	.....	22	.....	.....	.....	.....	.....	.....	.....	13	3	12	245 70
3635	17130	557	2	9	.....	262	2	1572	130	1820	322	170	30,094 80

(Jambons to Rivière au Bouleau.)

486	1400	525	.....	.....	1	.....	.....	.....	.....	220	143	15	4,556 50
52	100	25	.....	1	1	4	.....	12	.....	25	12	6	1,158 80
1170	2200	189	.....	.....	2	72	39	125	83	547	250	70	8,409 80
1109	4321	.....	.....	7	3	38	.....	98	.....	500	200	75	36,779 90
234	500	.....	.....	.....	2	8	.....	30	.....	120	60	8	1,196 00
3051	8521	739	.....	8	9	122	39	265	83	1412	665	174	52,101 00

RETURN showing the Number and Value of Vessels, Boats,

MINGAN SUB-DIVISION

NAME OF PLACE.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.					
	Vessels.				Boats.			Nets.		Seines.		Trap-Nets.	
	Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Fathoms.	Value.	Fathoms.	Value.	Number.	Value.
			$			$			$		$		$
Chaloupe	....	....	.....	....	3	150	6	70	30	50	100	....	....
Little River	....	....	.....	....	4	200	8	75	35	50	100	....	....
Sheldrake	....	....	.....	....	46	1800	109	150	200	200	250	2	160
Thunder River	....	....	.....	....	30	1500	65	150	200	150	120	....	....
Dock	....	....	.....	....	15	600	45	100	75	100	75	....	....
Rich Point	....	....	.....	....	10	400	30	100	75	100	75	....	....
Jupitagan	....	....	.....	....	4	160	9	200	200	.....	.....	....	....
Magpie	....	....	.....	....	60	2400	150	400	400	400	400	....	....
Magpie River	....	....	.....	....	3	75	3	200	200	.....	.....	....	....
St. John's	....	....	.....	....	40	1600	90	600	500	200	200	....	....
Long Point	....	....	.....	....	20	800	40	100	100	100	100	....	....
Mingan	....	....	.....	....	2	40	2	100	75	.....	.....	....	...
Romaine	....	....	.....	....	2	30	1	50	50	.....	.....	....	....
Esquimaux Point	22	550	20000	150	80	2400	200	2000	750	800	750	....	....
Betchouan	1	44	500	6	4	160	9	100	50	.....	.....	....	....
La Corneille	....	....	.....	....	2	75	3	200	125	.....	.....	....	....
Piashter Bay	....	....	.....	....	1	40	2	100	70	.....	.....	....	....
Watsheeshoo	....	....	.....	....	1	15	1	75	30	.....	.....	....	....
Totals	23	594	20500	156	327	12445	773	4700	3165	2150	2170	2	160

NATASHQUAN SUB-DIVISION

Nabisippi	....	....	.....	....	3	90	6	120	50	.....	.....	....	....
Agwanus	1	17	500	7	5	200	10	200	80	.....	.....	....	....
Washtawooka	....	....	.....	....	1	50	2	40	16	25	20	....	....
Natashquan Harbor	....	....	.....	....	10	350	20	400	200	26	30	....	....
Natashquan Village	6	157	3600	24	18	500	40	720	360	50	40	....	....
Natashquan River	....	....	.....	....	2	80	4	80	48	24	30	....	....
Totals	7	174	4100	31	39	1270	82	1560	754	125	120	....	....

Nets, &c., in the **County of Saguenay**, &c.—*Continued.*

(Chaloupe to Watsheeshoo).

Kinds of Fish.						Fish Products.						Fish used for Local Consumption, barrels.	Value.
Salmon, barrels.	Salmon, fresh, lbs.	Cod, cwt.	Halibut, lbs.	Herring, barrels.	Trout, barrels.	Cod Tongues and Sounds, barrels.	Seal Skins, No.	Seal Oil, gallons.	Cod Oil, gallons.	Fish used as Bait, barrels.	Fish used as Manure, barrels.		
													$ cts.
.....	.....	450	.....	.....	.....	.....	.....	.....	300	75	.....	15	2,092 50
.....	.....	550	.....	.....	.....	.....	10	50	450	80	.....	16	2,594 00
.....	.....	2000	1000	.....	.....	.....	5	25	2000	800	20	120	10,605 00
.....	.....	1200	1200	.....	.....	.....	15	75	1100	800	20	100	7,015 00
.....	.....	2000	.....	.....	.....	.....	.....	.....	1700	400	.....	15	9,340 00
.....	.....	1000	.....	.....	.....	.....	.....	.....	1200	300	.....	10	4,970 00
8	.....	400	.....	.....	.....	.....	20	100	300	80	.....	6	2,052 00
.....	.....	5000	1200	240	.....	.....	.....	.....	4300	950	50	220	25,130 00
45	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	732 00
.....	40000	3400	900	250	.....	.....	.....	.....	3000	700	50	220	25,845 00
.....	.....	750	300	.....	.....	.....	20	100	500	130	15	50	3,692 50
8	.....	.....	.....	.....	3	.....	50	250	.....	.....	.....	3	320 00
.....	.....	.....	.....	.....	5	.....	10	50	.....	.....	.....	2	88 00
.....	.....	1650	.....	1000	....	.....	5000	25000	1000	500	.....	438	28,502 00
.....	.....	150	.....	150	.....	.....	150	600	100	25	.....	20	1,747 50
9	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	3	176 00
12	.....	.....	.....	.....	2	.....	25	125	.....	.....	.....	2	295 00
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
82	40000	18550	4600	1640	12	.....	5305	26375	15950	4840	155	1243	125,196 50

(Watsheeshoo to English Point).

19	.....	60	.....	.....	.....	.....	.....	.....	50	50	.....	20	719 00
18½	.....	150	.....	5	.....	.....	7	28	135	100	.....	40	1,298 20
3	.....	70	.....	.....	.....	.....	.....	.....	60	20	.....	5	402 00
.....	.....	480	400	30	.....	.....	.....	.....	450	250	.....	50	2,835 00
18½	.....	1200	600	110	.....	2	5318	38000	1100	360	.....	100	27,514 00
75	.....	72	.....	8	4	.....	10	50	70	20	.....	20	1,728 00
134	.....	2032	1000	153	4	2	5335	38078	1865	800	.....	235	34,496 20

RETURN showing the Number and Value of Vessels, Boats,

WASHEECOOTAI SUB-DIVISION

NAME OF DISTRICT.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.					
	Vessels.				Boats.			Nets.		Seines.		Trap Nets.	
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	Fathoms.	Value.	No.	Value.
			$			$			$		$		$
Kegashka	....	....	....	....	4	80	3	75	50	20	15	....	....
Mistassini	....	....	....	....	1	20	1	50	30	.....	....	....	....
Curlew Point	....	....	....	....	1	20	1	30	25	.....	....	....	....
Washeecootai	....	....	....	....	2	30	3	250	150	.....	....	....	....
Romaine East	....	....	....	....	5	150	7	275	200	40	40	....	....
Coacoachoo	....	....	....	....	2	70	2	50	35	....	....	....	....
Totals	....	....	....	....	15	370	17	730	490	60	55	....	....

ST. AUGUSTIN SUB-DIVISION

Wolf Bay	....	....	....	....	3	120	4	150	100	40	25	....	....
Etamamin	....	....	....	....	4	112	3	200	110	.....	....	....	....
Point du Morier	....	....	....	....	1	100	2	150	100	.....	....	....	....
Harrington	....	....	....	....	26	390	23	100	70	380	500	....	....
Little Meccatina	....	....	....	....	5	75	8	80	50	50	60	....	....
Whale Head	....	....	....	....	16	200	20	240	200	240	200	1	100
Mutton Bay	....	....	....	....	26	700	29	460	400	360	300	2	200
La Tabatière	....	....	....	....	7	200	11	1400	1600	200	200	....	....
Big Meccatina	....	....	....	....	6	85	6	800	700	160	160	1	100
Kikapoe	....	....	....	....	2	23	3	450	330	.....	....	....	....
Poacachoo	..	....	....	....	2	95	2	400	300	43	20	....	....
Rigolet	....	....	....	....	2	22	2	342	200	.....	....	....	....
St. Augustin Bay	....	....	....	....	3	33	3	630	520	.....	....	....	....
St. Augustin River	....	....	....	....	2	48	2	360	200	.....	....	....	....
Sandy Island	....	....	....	....	1	50	1	400	400	.....	....	....	....
Cawcasippi	....	....	....	....	1	30	1	120	80	.....	....	....	....
L'Anse a Portage	....	....	....	....	2	87	2	330	240	.. ..	....	....	....
Canso Harbor	....	....	....	....	1	40	2	150	100	.....	....	....	....
Chicatica	....	....	....	....	2	60	5	117	100	80	50	....	....
Totals	....	....	....	....	112	2470	129	6879	5800	1553	1515	4	400

Nets, &c., in the **County of Saguenay**, &c.—*Continued.*

(English Point to Coacoachoo).

Kinds of Fish.							Fish Products.					Fish used for Local Consumption, barrels.	Value.
Salmon, barrels.	Salmon, fresh, lbs.	Salmon, in cans, lbs.	Cod, cwt.	Herring, barrels.	Trout, barrels.	Lobsters, in cans, lbs.	Seal Skins, No.	Seal Oil, gallons.	Cod Oil, gallons.	Fish used as Bait, barrels.	Fish used as Manure, barrels.		
													$ cts.
24			120				7	21	70	20		6	961 40
5							2	6					84 40
4					3		25	75				2	157 00
6					2								116 00
16												12	304 00
2			35		5	7350	7	21	25	5		2	1,144 90
57			155		10	7350	41	123	95	25		22	2,767 70

(Coacoachoo to Chicatica).

½			75						60	20		5	382 00
25												2	408 00
1			26	12			65	230	20	10		3	360 00
4			1560	796					1400	300		60	10,738 00
1			186				120	440	150	50		9	1,227 00
7			450				57	214	400	75		30	2,447 10
17			1820	175					1750	400		75	9,852 00
14			214	200			665	2330	200	50		20	3,712 00
2			435	202			168	536	400	70		15	3,287 40
6				28			76	250				3	396 00
12												2	200 00
3												6	72 00
12												6	216 00
4												3	76 00
2												2	40 00
1½												2	32 00
1			32						30	5		3	175 50
1												2	24 00
2			120	28					100	20		4	710 00
116			4918	1441			1151	4000	4510	1000		252	34,355 00

RETURN showing the Number and Value of Vessels, Boats,

BONNE ESPÉRANCE SUB-DIVISION

NAME OF PLACE.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.					
	Vessels.				Boats.			Nets.		Seines.		Trap-Nets.	
	Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Fathoms.	Value.	Fathoms.	Value.	Number.	Value.
			$			$			$		$		$
Nabitippi	....	....	.....	....	1	20	1	80	40	.....	.....	....	....
Bull Cove	....	....	.....	....	2	80	2	200	200	100	20	....	....
Rocky Bay	....	....	.....	....	6	200	10	200	200	.....	.....	....	....
Lydia's Cove	....	....	.....	....	2	100	2	200	200	.....	.....	....	....
Dog Islands	....	....	.....	....	4	200	6	600	600	.....	.....	....	....
Pêche-à-Lizotte	....	....	.....	....	1	30	1	300	100	.....	.....	....	....
Old Fort Island	....	....	.....	....	10	400	20	100	50	100	50	....	....
St. Paul's River	....	....	.....	....	4	100	4	600	400	.....	.....	....	....
Bonne Espérance	1	40	1400	12	60	3000	120	300	200	1600	2000	2	400
Waby Island	....	....	.....	....	8	400	25	.....	.....	100	100	....	....
Burnt Island	....	....	.....	....	10	800	25	.....	.....	100	100	....	....
Pigeon Island	....	....	.....	....	10	800	24	100	100	600	200	....	....
Stick Point	....	....	.....	....	4	300	10	200	200	400	100	....	....
Salmon Bay	....	....	.....	....	60	3000	130	200	100	800	400	....	....
Little Fishery	....	....	.....	....	2	100	3	200	200	100	100	....	....
Five Leagues	....	....	.....	....	3	150	6	100	70	.....	.....	....	....
Middle Bay	....	....	.....	....	30	1500	80	50	20	900	600	....	....
Belles Amour	....	....	.....	....	1	50	2	60	60	.....	.....	....	....
Bradore Bay	....	....	.....	....	20	1000	30	600	600	200	200	2	400
L'Anse des Dunnes	....	....	.....	....	6	200	10	200	200	100	50	....	....
Long Point	....	....	.....	....	4	200	6	600	600	100	60	....	....
Gulch Cove	....	....	.....	....	10	400	15	200	200	500	400	2	400
Blanc Sablons	1	90	3000	8	4	100	5	400	400	300	200	....	....
Green Island	....	....	.....	....	40	1600	100	500	500	1000	1200	....	....
Totals	2	130	4400	20	302	14730	637	5990	5240	7000	5780	6	1200

Nets, &c., in the **County of Saguenay**, &c.—*Continued.*

(Chicatica to Blanc Sablons).

Kinds of Fish.							Fish Products.						Fish used for Local Consumption, barrels.	Value.
Salmon, barrels.	Salmon, Fresh, lbs.	Salmon in Cans, lbs.	Cod, cwt.	Haddock, cwt.	Halibut, lbs.	Herring, barrels.	Seal Skins, No.	Porpoise Skins, No.	Seal Oil, galls.	Cod Oil, galls.	Fish used as Bait, barrels.	Fish used as Manure, barrels.		
														$ cts.
													4	16 00
9			20							20	5		4	255 50
6			150							150	40		12	864 00
10			20							20	5		4	271 50
2							300		1800				2	1,060 00
2													1	36 00
			300							300	75		25	1,532 50
20													4	336 00
2			4000			300				4000	1000		250	21,532 00
			600							600	150		25	2,965 00
			800							800	200		25	3,920 00
2			400				30		180	400	100		30	2,164 00
6			200				30		180	200	50		10	1,193 00
			3000							3000	700		300	15,450 00
6			50				40		240	50	10		4	483 00
4			100				60		360	100	20		6	762 00
			1600			300				1600	300		60	8,930 00
6			30							30	10		4	259 00
			2000				200		1200	2000	400		50	10,280 00
			400				500		3000	400	75		10	3,612 50
			400			50	300		1500	400	75		20	3,052 50
			1500							1500	300		10	7,090 00
			1200			60	250		1000	1200	200		10	6,510 00
			3000			100				3000	400		120	14,680 00
75			19770			810	1710		9460	19770	4115		990	107,054 50

RETURN showing the Number and Value of Vessels, Boats,

ISLAND OF ANTICOSTI

NAME OF DISTRICT.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.					
	Vessels.				Boats.			Nets.		Seines.		Trap-Nets.	
	Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Fathoms.	Value.	Fathoms.	Value.	Number.	Value.
			$			$			$		$		$
Fox Bay	....	....	.....	....	10	400	20	400	200	100	100	....	.....
Salmon River	....	....	.....	....	3	120	6	130	130	.....	.....	....	.....
Mauzerolle	....	....	.....	....	10	400	20	400	200	.....	.....	....	.....
Potato River	....	....	.....	....	4	160	8	50	50	.....	.....	....	.....
Wreck Cove	....	....	.....	....	6	240	12	80	100	.....	.....	....	.....
Tapp's Cove	....	....	.....	....	6	240	12	80	100	.....	.....	....	.....
Cow Cove	....	....	.....	....	6	240	12	80	100	.....	.....	....	.....
Capelin Bay	....	....	.....	....	8	320	16	120	150	.....	.....	....	.....
Macdonald's Cove	....	....	.....	....	36	1440	75	1000	500	120	100	....	.....
Indian Harbor	....	....	.....	....	6	240	12	100	150	.....	.....	....	.....
English Bay	....	....	.....	....	20	600	40	800	500	.....	.....	....	.....
Strawberry Cove	....	....	.....	....	12	240	26	500	300	100	80	....	.....
Becscie River	....	....	.....	....	1	30	1	50	50	.....	.....	....	.....
Jupiter River	....	....	.....	....	2	60	2	200	200	....	.....	....	.....
Shallop River	....	....	.....	....	2	100	2	150	150	.....	.....	....	.....
Dauphin River	....	....	.....	....	1	20	1	100	75	.....	.....	....	.....
Cormorant Point	....	....	.....	....	....	.....	...	.....	.....	.....	.....	....	.....
Totals	....	....	.....	....	133	4850	265	4240	2955	320	280	....	.....

RECAPITULATION FOR THE

SUB-DIVISIONS.													
Point des Monts	11	196	4125	29	91	1980	127	4320	2420	620	895	1	300
Moisie	2	31	800	7	53	2232	150	7807	6638	1038	887	....	...
Mingan	23	594	20500	156	327	12445	773	4770	3165	2150	2170	2	160
Natashquan	7	174	4100	31	39	1270	82	1560	754	125	120	....	.....
Washeecootai	....	....	.....	....	15	370	17	730	490	60	55	....	.....
St. Augustin	....	....	.....	....	112	2470	129	6879	5800	1553	1515	4	400
Bonne Espérance	2	130	4400	20	302	14730	637	5990	5240	7000	5780	6	1200
Anticosti	....	....	.....	....	133	4850	265	4240	2955	320	280	....	.....
Totals	45	1125	33925	243	1072	40347	2180	36296	27462	12866	11702	13	2060

Nets, &c., in the **County of Saguenay**, &c.—*Concluded.*

SUB-DIVISION.

Kinds of Fish.										Fish Products.								Value.
Salmon, brls.	Salmon, fresh, lbs.	Cod, cwt.	Halibut, lbs.	Herring, brls.	Mackerel, brls.	Trout, brls.	Eels, brls.	Cod Tongues and Sounds, brls.	Lobsters, in cans, lbs.	Seal Skins, No.	Porpoise Skins, No.	Seal Oil, galls.	Porpoise Oil, galls.	Cod Oil, galls.	Fish used as Bait, brls.	Fish used as Manure, brls.	Fish used for Local Consumption, brls.	
																		$ cts.
5	....	180	1200	....	..	..	..	....	....	10	..	30	....	100	125	50	30	1,314 50
10	.....	.....	.....	9	..	..	..	....	....	120	..	300	....	.....	.....	10	6	465 00
3	.....	200	300	30	..	..	..	....	....	.....	..	.....	....	120	30	....	6	1,115 00
4	.....	100	200	15	..	..	..	....	....	.. ..	..	.....	....	75	15	....	2	604 50
....	.....	110	200	20	..	..	..	....	....	.....	..	.....	....	78	15	....	3	605 70
....	.....	118	200	25	..	..	..	....	....	.....	..	.....	....	80	15	....	3	658 50
....	.....	118	200	25	..	..	..	....	....	.....	..	.....	....	80	15	....	3	658 50
2	.....	160	750	200	..	..	..	....	....	.....	..	.....	....	100	120	....	10	1,807 00
4	.. ...	1180	1200	150	..	..	..	....	....	.....	..	.....	....	750	200	....	40	6,264 00
....	.....	190	.....	30	..	..	..	....	....	.....	..	.....	....	130	30	....	3	989 00
....	.....	1000	8000	75	..	..	..	....	....	75	..	215	....	700	180	100	80	6,181 00
....	.....	900	3500	50	..	..	30	..	....	56	..	168	....	630	150	75	60	5,327 70
2	.....	.....	.....	....	..	..	..	....	....	15	..	45	....	.....	.....	...	2	73 00
10	.....	.....	.....	....	..	..	..	....	....	.....	..	.....	....	.....	.....	....	1	164 00
10	.....	.....	.....	....	..	..	..	....	....	10	..	30	....	.....	.....	....	2	190 00
4	.....	.....	.....	....	..	..	..	....	....	.....	..	.....	....	.....	.....	....	....	64 00
....	.....	50	....	....	..	..	..	....	....	.....	..	.....	....	25	10	....	1	229 00
54	.....	4306	15750	629	..	..	30	....	....	286	..	788	....	2868	905	235	252	26,710 40

COUNTY OF SAGUENAY.

....	43250	3635	17130	557	2	9	..	....	....	262	2	1572	130	1820	322	....	170	30,094 80
4	165702	3051	8521	739	..	8	..	9	...	122	39	265	83	1412	665	....	174	52,101 00
82	40000	18550	4600	1640	..	12	..	....	....	5305	..	26375	....	15950	4840	155	1243	125,196 50
134	.....	2032	1000	153	..	4	..	2	....	5335	..	38078	....	1865	800	....	235	34,496 20
57	.....	155	.....	....	..	10	..	....	7350	41	..	123	....	95	25	....	22	2,767 70
116	.....	4918	.....	1441	..	..	..	....	....	1151	..	4000	....	4510	1000	....	252	34,355 00
75	.....	19770	.....	810	..	..	..	....	....	1710	..	9460	....	19770	4115	....	990	107,054 50
54	.....	4306	15750	629	..	..	30	....	....	286	..	788	....	2868	905	235	252	26,710 40
522	248952	56417	47001	5969	2	43	30	11	7350	14212	41	80661	213	48290	12672	390	3338	412,776 10

RETURN showing the Number and Value of Vessels, Boats and Fishing Materials, the Number of Men Employed, with the Kinds and Quantities of Fish, &c., in the **Gulf Division**, Province of Quebec, for the Year 1889.

GRAND TOTAL OF GULF DIVISION.

NAME OF COUNTIES.	VESSELS AND BOATS EMPLOYED IN FISHING.							FISHING MATERIAL.						KINDS OF FISH.				
	Vessels.				Boats.			Nets.		Seines.		Trap-Nets.						
	Number.	Tonnage.	Value.	Men.	Number.	Value.	Men.	Fathoms.	Value.	Fathoms.	Value.	Number.	Value.	Smelt, lbs.	Salmon, barrels.	Salmon, fresh, lbs.	Cod, cwt.	Haddock, cwt.
			$			$			$		$		$					
Bonaventure	7	330	6,500	33	1,190	27,780	1,912	57,389	33,698	5,875	3,805	11	275	49,300	.....	131,384	19,615	275
Gaspé	45	2,331	65,600	322	2,536	86,586	4,384	97,525	54,969	5,397	6,049	1	350	121,860	26	96,881	109,771	1,474
Saguenay	45	1,125	33,925	243	1,072	40,347	2,180	36,296	27,462	12,866	11,702	13	2,060	.....	522	248,952	56,417	....
Total	97	3,786	106,025	598	4,798	154,713	8,476	191,210	116,129	24,138	21,556	25	2,685	171,160	548	477,217	185,803	1,749

NAME OF COUNTIES.	KINDS OF FISH.								FISH PRODUCTS.								TOTAL.
	Halibut, lbs.	Herring, barrels.	Herring, smoked, boxes.	Mackerel, barrels.	Trout, barrels.	Eels, barrels.	Cod Tongues and Sounds, barrels.	Lobsters, in cans, lbs.	Seal Skins, No.	Porpoise Skins, No.	Seal Oil, galls.	Porpoise Oil, galls.	Whale Oil, galls.	Cod Oil, galls.	Fish used as Bait, barrels.	Fish used as Manure, barrels.	Fish used for Local Consumption, barrels.	
																		$ cts.
Bonaventure	.....	1,965	1,325	.....	....	100	15	96,904	.....	....	.....	....	....	14,110	4,765	38,900	6,980	189,433 03
Gaspé	43,850	15,988	110	4,600	80	20	74	489,696	12,121	2	79,969	220	160	88,234	30,818	6,213	10,694	840,406 92
Saguenay	47,001	5,969	.....	2	43	30	11	7,350	14,212	41	80,661	213	....	48,290	12,672	390	3,338	412,776 10
Total	90,851	23,922	1,435	4,602	123	150	100	593,950	26,333	43	160,630	433	160	150,634	48,255	45,503	21,012	1,442,616 05

STATEMENT of the Value of Lobster Canneries and Outfit, in the Gulf Division, Season of 1889.

COUNTY OF BONAVENTURE.

Locality.	Number of Traps.	Value of Traps, Boats, &c.	Value of Buildings, Machinery, &c.	Total Value.
		$	$	$
Bonaventure	750	550	750	1,300
Nouvelle	1,100	900	900	1,800
Port Daniel	800	1,040	1,600	2,640
L'Anse au Gascon	600	520	600	1,120
Totals	3,250	3,010	3,850	6,860

COUNTY OF GASPÉ (Mainland).

Newport	800	900	600	1,500
do	600	700	500	1,200
Grand Pabos	600	425	300	725
Little River West	750	875	600	1,475
Grand River	800	700	200	900
Cape Despair	1,200	1,300	1,200	2,500
Percé	500	500	1,200	1,700
Bonaventure Island	500	550	325	875
Corner of the Beach	735	835	800	1,635
Belle Anse	600	500	300	800
Chien Blanc	350	375	200	575
Bois Brulé	600	600	200	800
Seal Cove	800	850	1,200	2,050
Cap aux Os	500	450	300	750
Totals	9,335	9,560	7,925	17,485

COUNTY OF GASPE (Magdalen Islands).

Bryon Island	1,000	880	1,000	1,880
do	500	440	600	1,040
Grosse Isle	500	440	420	860
do	300	270	325	595
Grand Entry	500	440	400	840
do	1,500	1,320	2,300	3,620
do	1,200	1,080	2,000	3,080
Old Harry	800	690	750	1,440
Wolf Island	700	620	1,000	1,620
Cap au Meulles	1,000	880	1,500	2,380
do	2,000	1,700	2,500	4,200
do	2,000	1,820	3,000	4,820
House Harbor	240	220	60	280
Etang du Nord	1,200	970	2,000	2,970
do	2,000	1,740	3,200	4,940
Amherst	1,500	1,320	2,500	3,820
Etang des Caps	2,000	1,740	2,000	3,740
Dune du Sud	600	570	4,000	4,570
Totals	19,540	17,140	29,555	46,695

COUNTY OF SAGUENAY (Labrador).

Coacoachoo	400	500	300	800

TOTAL OF LOBSTER CANNERIES IN GULF DIVISION.

County Bonaventure 4 canneries	3,250	3,010	3,850	6,860
do Gaspé (Mainland) 14 do	9,335	9,560	7,925	17,485
do do (Magdalen Islands) 18 do	19,540	17,140	29,555	46,695
do Saguenay 1 do	400	500	300	800
Grand Totals 37	32,525	30,210	41,630	71,840

STATEMENT of the Value of Material Employed in Fisheries of the Gulf Division, Season of 1889.

Description.	Value.
	$
Vessels, 97, of 3,786 tons	106,025
Boats, 4,798	154,713
Nets, 191,210 fathoms	116,129
Seines, 24,138 fathoms	21,556
Traps and smelt bag nets, 25	2,685
37 lobster factories and plant, 19,540 traps	46,695
Total	447,803

STATEMENT of Men Employed in Gulf Fisheries, Season of 1889.

Description.	Number.
Sailors	598
Fishermen and shoremen	8,476
Total	9,074

RECAPITULATION.

STATEMENT of the Yield and Value of the Fisheries of the **Gulf Division,** Province of Quebec, during the Year 1889.

Description.		Quantity.	Price.	Value.
			$ cts.	$ cts.
Smelt, fresh	Lbs.	171,160	0 05	8,558 00
Salmon, salt	Brls.	548	16 00	8,768 00
do fresh	Lbs.	477,217	0 20	95,443 40
Cod, salt	Cwt.	185,803	4 00	743,212 00
Haddock, salt	"	1,749	4 00	6,996 00
Halibut, fresh	Lbs.	90,851	0 10	9,085 10
Herring, salt	Brls.	23,922	4 00	95,688 00
do smoked	Boxes	1,435	0 25	358 75
Mackerel, pickled	Brls.	4,602	15 00	69,030 00
Trout	"	123	10 00	1,230 00
Eels	"	150	10 00	1,500 00
Cod tongues and sounds, pickled	"	100	10 00	1,000 00
Lobsters, canned	Lbs.	593,950	0 12	71,274 00
Seal skins	Pieces	26,333	1 00	26,333 00
Porpoise skins	"	43	5 00	215 00
Seal oil	Galls.	160,630	0 40	64,252 00
Porpoise oil	"	433	0 40	173 20
Whale oil	"	160	0 40	64 00
Cod oil	"	150,634	0 40	60,253 60
Fish as bait	Brls.	48,255	1 50	72,382 50
do as manure	"	45,503	0 50	22,751 50
do for local consumption	"	21,012	4 00	84,048 00
Total Value in 1889				1,442,616 05
do 1888				1,311,448 74
Increase for 1889				131,167 31

SYNOPSES OF FISHERY OVERSEERS' REPORTS IN THE PROVINCE OF QUEBEC, EXCLUSIVE OF THE GULF DIVISION, FOR THE YEAR 1889.

SOUTH SHORE DIVISION, FROM CAPE CHATTE TO POINT LÉVIS.

Overseer J. Joncas, who took the place of Mr. Saucier, whose services were dispensensed with, has charge of that portion of the River St. Lawrence extending from Cape Chatte to River Blanche, including Matane River. He reports a further decline in the salmon fishery, only 3,540 lbs. of fish having been caught. There were forty salmon killed with the fly in Matane River, against fifty-one last year. The river kept very low, which may, to some extent, account for this poor sport. One hundred and fifty barrels of sardine herrings are reported, when none were caught in 1888. Four hundred porpoises were killed. This is an unprecedented yield on this part of the coast of the St. Lawrence, and swells the total value of the fisheries of this division to $15,138.

Overseer L. E. Grondin's division extends from Rivière Blanche to Rimouski. He reports a decrease in the yield of salmon and herring, but an increase in sardines. No violations of the law came to his knowledge. The value of the fisheries in this district is given at $33,992.

Overseer H. Martin, whose division extends from Rimouski to Pointe à la Loupe, reports a slight improvement in the condition of the fisheries of his district. Salmon were more abundant in Rimouski River than for several years past, twenty-two fish having been caught by the anglers. The same cannot be said of south-west Bic River, which is almost ruined for want of protection. The local lessee had a guardian this summer. The total value of the fisheries of this division is put down at $15,775.

Overseer Napoléon Levesque, who has charge of the frontage of the County of Temiscouata, reports that although fish may seem as plentiful as ever, the catch was much below the average, especially in that of shad at Isle Verte, where a decrease of 50 per cent. was experienced. This is attributed to the stormy weather which prevailed during the whole fishing season. No violations of the fishery regulations were detected. The fishways were kept in good order. The value of the fisheries of this district foot up to only $13,296. Last year the fishermen of Ile Verte killed forty-three porpoises and twenty-four seals; this season none are reported.

Overseer X. Pelletier, whose district extends from Ste. André to Ste. Anne de la Pocatière, reports a considerable increase in the yield of the fisheries of his division. Salmon show an increase of 80 per cent. Eels more than doubled, 156,750 lbs. being returned. Thirty-six porpoises were killed in the sedentary fisheries of Ste. Anne and Riviere Ouelle. The total value of the fisheries is given at $22,557.

Overseer Eugene Pelletier's division extends from Ste. Anne de la Pocatière to Point Levis. With the exception of the shad fishery, which was a partial failure, owing to violent north-east storms destroying most of the fisheries, the other branches show well enough, yielding about 70 per cent. on invested capital. This overseer complains of an alarming destruction of small fish in the brush fisheries of the north coast as well as in those of the south. He is credibly informed that the small fish destroyed at one time in some of those fisheries might have supplied the wants of the fishermen for ten years had they been allowed to grow, instead of finding their way to the manure heap. Another cause of abuse exists in the eel weirs, which, being usually set in May, before farming time, are never visited till late in summer. The boxes are then found full of rotten fish of all kinds. The bottom of these weirs are indeed supplied with wire netting, as the law directs, but they are left so long without being visited that they destroy thousands of food fish. Mr. Pelletier expects to be able to check the injurious practice of seining for smelts by next season. The otal value of the fisheries amounts to about $20,000.

NORTH SHORE OF THE RIVER ST. LAWRENCE, FROM QUEBEC TO BERSIMIS

QUEBEC AND MONTMORENCY DIVISION

Overseer L. P. Huot's division comprises the coast of the Island of Orleans and that part of the north shore of the River St. Lawrence extending from Château Richer to St. Joachim. Shad and eels show a steady decline. The absence of the former fish was not only noticed in the division, but in all others in the Quebec district, hardly any being seen on the city market. Smelts have also decreased. Salmon shows an improved yield as compared with last year; so does bar and whitefish. Several fishermen in this division gave up fishing, three salmon stations and as many eel weirs being unoccupied. It is to be hoped that a few more of those which are too closely set may drop out. The total value of the fish caught in this division comes up to nearly $20,000, and is all disposed of in the local markets.

Overseer U. Bhereur's division extends from River du Gouffre to River aux Canards, including Coudres Island. Salmon shows a steady decline. Herring and sardines have increased. One hundred and forty-six porpoises were killed by the fishermen of Coudres Island. The total value of the fisheries of this division is $20,000, including the estimated yield of the inland waters, where a good catch of trout is reported.

Overseer L. N. Catellier, who has charge of the Saguenay District, says that the salmon appeared earlier than usual. Fishing was good, showing an increase of 50 per cent. over the yield of last year, and would have been still larger had not the nets been partly carried away by heavy gales during the fishing season. In six weeks' time the hatchery net at Point Rouge caught 559 fish, 310 of which were kept for manipulating purposes, while the others were liberated alive. The herring fishery shows some improvement. Complaints of seining in Petite Bergeronnes River could not be substantiated. Speckled trout were abundant, and good catches are reported. One party caught 85 lbs. and another 100 lbs. in two tides. Illegal salmon fishing is said to have been carried on by poachers from Ha! Ha! Bay.

There are only three fish-ways in this division. Two of them are in good order, but the third one, on Escoumains River, although built at considerable expense, never proved efficient.

The total value of the fisheries of this division is given at $19,061.

FROM QUEBEC TO UPPER OTTAWA.

RICHELIEU COUNTY DIVISION.

Overseer Félix Latraverse, who has charge of this division, reports a catch of 46,000 lbs. of eels, 12,000 lbs. of pickerel and 15,000 lbs. of pike. He recommends that seining be prohibited during the months of July and August, in order to give additional protection to the fry. The weather was very propitious, and thanks to an early spring the fishermen had a remunerative season.

Overseer J. F. Picotin, who has charge of the St. Francis River, reports an increased yield of eels. He is not aware of any abuse existing in his division, as fishermen generally conform to the regulations. During the close season he confiscated a few fish. The Nicolet River is said to be unprovided with fish-passes. The total value of the fisheries of these two dvisions amounts to $15,659.80.

VERCHÈRES DIVISION.

Overseer John Morris, of the Montreal district, is in charge of this division. Shad shows a decline; eels have slightly increased, a catch of 326,000 lbs. being reported. Although the number of licensed fishermen was under that of last year, the yield of the fisheries exceeds that of 1888 by nearly $2,000, being reckoned at $27,100.

IBERVILLE DIVISION, INCLUDING THE RICHELIEU RIVER.

Overseer J. B. Chevalier, who has charge of the Richelieu River from St. John to Lake Champlain, reports the fishery regulations as having been well observed by the majority of the fishermen. It is only a few who cause trouble. The decline noticed in the fisheries of the Richelieu is attributed to the excessive number of hoop nets, which, with their leaders, almost bar the channels of the river. The meshes of these nets should be 1½ inch, the same as the seines. The Richelieu is now much frequented by sportsmen from Montreal and from across the border, who, by angling and trolling, average from fifty to seventy-five fish per day, such as bass, pickerel and perch. The total value of the fisheries of this division is put down at $5,000; a decrease of 50 per cent.

Overseer J. O. Dion, who has charge of the lower part of the Richelieu River from Richelieu village to Sorel, reports a large falling off in the number of fish frequenting this part of the river. This he ascribes to the inefficient fish-pass at the Government dam at St. Ours, which prevents the fish from Lake St. Peter from ascending. He approves of the present regulation allowing the use of seines between 1st October and 15th April. The value of the fisheries of this division is small, amounting to barely $2,000.

CHATEAUGUAY DIVISION.

Overseer J. Laberge, who has charge of the Chateauguay River, reports an increased catch of bass. The other kinds of fish are said to be about the same. There were only five licensed gill-net fishermen in this district; five others fished all summer in the neighboring district; thirteen took licenses for night lines, but a large number refused to pay any licenses at all. There are two fish-passes in this division, both in good order, but that at Ste. Martine was damaged by ice in the spring, and the water kept so high during the whole summer that it was impossible to repair it. To properly protect bass, all kinds of fishing should be prohibited in Chateauguay River from the 15th April to the 15th June in each year. It might also be advisable to enact a close season for perch—from 1st to 15th May. This fish being handy for the farmers during the summer, it should be protected. The value of the fisheries of this division is set down at $22,240.

BEAUHARNOIS DIVISION.

Overseer John Kelly, who has charge of that part of Lake St. Francis fronting on the counties of Beauharnois and Huntington, reports bass as being less plentiful than formerly. This might have been caused by the destruction of young fish and spawn by seines in the spring. Pickerel gave about an average yield. Maskinongé seems to have increased. The close seasons were fairly well observed. Six fish-ways were erected in this division during the summer, four on Chateauguay River, one on Hinchinbrooke River and another on Trout River. Mr. Kelly prides himself in having succeeded in compelling all mill-owners in his division to desist from the injurious practice of throwing sawdust and other mill refuse into the water. Some constructed elevators, while others took proper steps to abate the nuisance. The farmers along the stream fully appreciate what the Department did for them in this matter. The total yield of the fisheries of this division is valued at $15,607.

MISSISQUOI BAY DIVISION.

Overseer P. E. Luke, who has charge of Missisquoi Bay, returns a falling off in every kind of fish in his division, which he attributes to a less vigorous prosecution of the fishery. No violations of the law occurred, the different close seasons being well observed. Only one fish-way was kept open; the other three could not be completed, owing to the high water. The total value of the fisheries of this division is put down at $3,000.

MAGOG AND BROME DIVISIONS.

Overseer N. A. Beach, who has charge of Lake Memphremagog, states that there seems to be a steady increase of lake trout, bass and whitefish. Pickerel are declining. For this he is unable to account. He recommends that the close season for lake trout or lunge be made to read from 1st October to 1st December. Some difficulty was experienced with poachers during the close season. One party was fined $20 and had his boat confiscated.

Overseer T. Marchessault, who had charge of Brome Lake, resigned in the fall. The total value of these two divisions is reckoned at $12,970.

SHERBROOKE AND MEGANTIC DIVISIONS.

Overseer P. W. Nagle, who has charge of the waters of the County of Stanstead, states that, owing to his vigilance, the different regulations were well observed and very few violations of the law occurred. Fishing was good, over 15,000 lbs. of trout being returned. No impediments to the ascent of fish exist; all the fish-ways are in proper repair.

Overseer Joel Shurtleff, who has charge of the waters of the County of Compton, reports the catch of fish as an average one. Trout are said to be getting more abundant, 10,000 lbs. at least being taken in his division. The close seasons are fairly observed. Mr. Shurtleff made only two seizures of nets, but could not discover the owners. Out of eight fish-ways in this district, some are not in good repair.

Overseer A. L. Darche, whose division comprises the inland waters of the counties of Richmond and Wolfe, reports a fair observance of the fishery regulations and no violations of the close seasons. Only one net was seized and destroyed. The four fish-ways in the streams of this division were kept open and in satisfactory order. Mr. Darche returns 66,000 lbs. of trout, 14,000 lbs. of sturgeon, 17,000 lbs. of bass, 14,800 lbs. of pickerel—and other fish, valued altogether at $7,560.

Overseer J. B. McDonald, who has charge of Lake Megantic, states that since nothing but angling is permitted in his division speckled and lake trout are becoming more abundant. He still has trouble with poachers. A case is now pending in court. Mr. McDonald claims that the close season for speckled trout should begin about the 1st September, and that for lunge on the 1st October, to suit the waters of his division.

Overseer John McCaw, who supervises lakes in the Wolfe and Megantic divisions, returns the catch of trout at 22,000 lbs., pickerel 17,000 lbs., and pike 12,000 lbs. A great deal of damage is done to the waters of Lake Aylmer by mill owners allowing the sawdust and refuse of their mills to run into the rivers. Speckled trout caught on the 18th September were this year full of spawn. Very little illegal fishing is carried on, a sharp look out being kept all the time.

Overseer P. C. Bourk, who has charge of the inland waters of the County of Megantic, reports that the laws were well enforced, with the exception that sawdust was allowed to drift in Becancour, Noire and Blanche rivers.

ST. MAURICE AND CHAMPLAIN DIVISION

Overseer Joseph Lambert, of Three Rivers, has charge of that portion of the St. Lawrence fronting on the County of St. Maurice. He reports a falling off of 50 per cent. in the yield of the fisheries of his division as compared with last year. This the fishermen attribute to a scarcity of fish, but the overseer is of opinion that more than one-half of them did not fish, in order to escape paying license fees. There was only 30,000 bushels of tom-cods taken, as against 75,000 in 1888. The total value of the fisheries of his district is given at $50,250.

BERTHIER, MONTCALM AND JOLIETTE DIVISION.

Overseer S. A. Grant, who had charge of that part of the River St. Lawrence fronting on the County of Maskinongé, was also entrusted with the Berthier Division, in the place of ex-overseer Hanson, resigned.

He reports a considerable falling off in the yield of the fisheries of his division, which he attributes to a less vigorous prosecution of this industry, and to the fact that several fishermen preferred not to fish with hoop nets rather than to pay license fees.

The total value is $3,539 for the present season.

MONTREAL DIVISION.

Overseer John Morris, whose division comprises the waters around the Island of Montreal, reports that the fishery laws were better observed this season than during former years.

The most noticeable increase is in maskinongé; bass and doré also exceeded the catch of 1888. Mr. Morris recommends the extending of close season for doré until 1st June, if not longer, in order to give this fish better protection.

The total value of the fisheries of this division reaches only $18,436, a decrease of $10,000, caused by the failure of shad only.

TERREBONNE DIVISION.

Overseer Jos. Lauzon, who has charge of Rivers Jésus and Des Prairies, reports a large falling off in sturgeon and shad; the other kinds of fish yielded about the same as last year. He is at a loss to explain the reason. No illegal fishing came to his knowledge. All the fish caught in this division are used for local consumption.

Overseers Cloutier and *Filiatrault*, who have charge of the inland waters of the County of Terrebonne, return, the former 35,000 lbs. and the latter 6,000 lbs. of trout. Upon complaints of illegal fishing, Mr. Cloutier visited his division in the fall, but failed to establish sufficient proofs to warrant prosecutions.

The total value of the fisheries of this whole division is given at $5,240.

LAKE OF THE TWO MOUNTAINS AND ISLE PERROT DIVISIONS.

Overseer Théophile Sabourin's division comprises the south shore of the River Ottawa, from Oka to Carillon. He states that, fishermen are now reconciled to the license system and conform to the regulations. There is a falling off in the yield of sturgeon, but an increase in the catch of coarse fish.

Overseer Julien Monpetit, who has charge of the waters around Isle Perrot, returns eighteen licensed fishermen, besides sportsmen. He had some trouble with poachers from Lachine and Montreal, but hopes to keep the upper hand another season. The yield was an average one; fishermen being very reluctant in giving statement of their catch, apprehending an increase in the license fee.

The total value of the fish caught in this division is put down at $3,566.

Overseer R. W. Jones, who attends to the north shore of the Ottawa, from Oka to Carillon, states that, for some unexplained reason, maskinongé and bass only made their appearance in September. The yield is, therefore, considerbly diminished. Other kinds of fish were about the same as in 1888. There are no fish-ways on the North River yet; the prevailing notion being that manufactures and the lumber industry are of more importance than fish. The weekly close time and other close-seasons were fairly well observed.

The total value of the fish caught in this division is reckoned at $6,042.

UPPER OTTAWA AND GATINEAU DIVISIONS.

Overseer Joseph Marion, who has charge of the fisheries of the County of Ottawa, reports as follows:—

"According to your instructions, directing me to make a visit of my division for the purpose of collecting the fishery statistics and ascertaining the state of the fisheries generally, I visited the following places: The bays around River Blanche, Petrie Islands, the bays between L'Ange Gardien and the Lièvre, Campbell's Bay, Black Bay, Pentecost Bay, &c., &c., down to Salmon River.

"Generally speaking, the yield of the fisheries has been satisfactory enough, and the value of fish caught will be fully equal to that of last year, but there is a great falling off in the quality. Most of the fish caught this year consists of carp, pike, perch, catfish, mudpouts and eels. The best grades of fish, such as bass, whitefish, pickerel and maskinongé have almost entirely disappeared, and there is only one voice to attribute this state of things to sawdust and mill rubbish, which, after filling up the bays, are now spreading to the beds where fish spawn. At all these places sawdust to the depth of 2, 3, 4, and sometimes 10 feet is noticed. The main channel opposite the Blanche is mostly choked up with mill rubbish and sawdust; the large bay of L'Ange Gardien and the Lièvre are also full of sawdust. Opposite these bays, on the south side of the River Ottawa, are large bays where the fishermen used to take great numbers of fish. Now, however, the mouths of these bays are completely blocked up with sawdust. Between these last places, on the same side of the Ottawa, down to the Nation River, there is not quite so much mill rubbish, but it must be observed that the spawning grounds are mostly on the north side, such as Campbell's Bay, Black Bay and Pentecost Bay, where a good deal of sawdust is found.

"It is the same on the islands and low lands, where farmers used to gather much hay. These places are now entirely covered with sawdust, so much so that the land is not even fit for grazing purposes.

"On Lake des Chênes, on the upper part of my division, where no net fishing is allowed, angling and night-line fishing have been very satisfactory. The fish are of a better quality than in the lower part of my division, and the sawdust nuisance is not so great. Maskinongé, bass and pickerel afforded great sport to anglers, while large numbers of catfish, mudpouts and eels were caught with night lines. The Aylmer markets were amply supplied with fish during the whole season.

"Warden Joynt, of Lake Bernard, reports good catches of trout and bass in the inland waters of Masham and Aldfield."

The total value of the fisheries of this division is set down at $23,763.

STATISTICS OF FISHERIES IN THE PROVINCE OF QUEBEC

RETURN of Fishing Stations, Number and Value of Fishing Boats and Nets, Number
the River St. Lawrence, from **Cape Chatte**

NAMES OF PLACES.	FISHING BOATS.		Number of Fishermen.	KINDS OF NETS USED.								
				Gill Nets.			Seines.		Brush Fisheries.		Eel Fisheries.	
	Number.	Value.		Number.	Fathoms.	Value.	Fathoms.	Value.	Number.	Value.	Number.	Value.
		$				$		$		$		$
Capucins, Mechins, Grosses Roches, Ste. Félicité, Matane	98	1960	300	76	1660	1680	....	....	21	525	3	20
Boules and Rivière Blanche	....	....	....	....	....	....	....	....	8	128	....	....
Métis	....	....	....	....	....	....	....	....	5	100	....	....
St. Flavie	....	....	....	....	....	....	....	....	1	16	....	....
St. Luce	....	....	....	....	....	....	....	....	13	208	....	....
St. Anne	....	....	....	....	....	....	....	....	11	220	....	....
Rimouski	....	....	....	....	....	....	....	....	3	60	....	....
Rivière Rimouski	1	20	6	....	....	....	....	....	....	....	....	....
Islet à Canuel	11	220	20	2	50	24	....	....	7	400	3	40
Rivière Hâtée	14	175	28	....	....	....	1	30	13	500	....	....
L'Anse au Foin and St. Fabien	8	83	19	1	250	75	1	20	9	290	....	....
St. Simon	9	100	20	1	125	75	6	100	6	200	9	100
Lake Temiscouata & Touladi River	12	120	24	20	300	126	....	....	2	40	....	....
Inland Waters, Co. Temiscouata	....	....	....	....	....	....	....	....	....	....	....	....
Ile aux Pommes	1	100	2	....	....	....	....	....	1	100	....	....
Trois Pistoles	2	100	11	....	....	....	....	....	9	330	....	....
Isle Verte	6	800	10	....	....	....	....	....	4	250	4	40
do (mainland)	17	2150	40	1	30	25	....	....	19	1900	....	....
Cacouna	....	....	18	1	30	30	....	....	11	2200	6	110
Rivière du Loup	....	....	7	17	397	410	....	....	3	320	4	40
Notre Dame du Portage	....	....	10	....	....	....	....	....	4	110	9	118
St. André	....	....	....	....	....	....	....	....	7	380	14	275
Kamouraska	....	....	....	....	....	....	....	....	5	580	2	110
St. Denis	....	....	....	....	....	....	....	....	5	465	13	540
Rivière Ouelle	....	....	....	....	....	....	....	....	1	40	40	2535
Ste. Anne la Pocatière	....	....	....	....	....	....	....	....	....	....	18	858
Inland waters, County L'Islet	....	....	....	....	....	....	....	....	....	....	....	....
St. Roch	....	....	36	....	....	....	....	....	....	....	36	1820
St. Jean	....	....	46	....	....	....	....	....	....	....	46	2160
L'Islet	....	....	20	....	....	....	....	....	....	....	20	1190
Isle aux Grues	....	....	23	....	....	....	....	....	23	4900	....	....
L'Anse à Gill	....	....	10	....	....	....	....	....	10	1000	....	....
Cap St. Ignace	....	....	10	....	....	....	....	....	10	690	....	....
St. Thomas	....	....	40	....	....	....	....	....	40	2000	....	....
Berthier	4	48	26	....	....	....	....	....	3	1800	23	425
St. Valier	3	120	2	....	....	....	....	....	2	2900	....	....
St. Michel	5	180	5	....	....	....	....	....	5	2800	....	....
Beaumont	9	270	4	....	....	....	....	....	4	2100	....	....
Point Levis	10	400	6	....	....	....	....	....	5	3000	....	....
Totals	210	6846	743	119	2842	2445	8	150	270	30552	250	10381

EXCLUSIVE OF THE GULF OF ST. LAWRENCE.

of Men, together with the Yield, Value and Kinds of Fish, &c., on the South Shore of to Point Lévis, during the Year 1889.

Kinds of Fish.										Fish Products.			Value.
Salmon, lbs.	Trout, lbs.	Shad, lbs.	Herring, brls.	Eels, lbs.	Sturgeon, lbs.	Sardines, brls.	Whitefish, lbs.	Pickerel, lbs.	Coarse and Small Fish, brls.	Fish for manure, brls.	Porpoise Skins, No.	Porpoise Oil, galls.	$ cts.
3540	1000	.....	250	1000	.....	150	.....	.....	600	.....	400	24000	15,318 00
1125	.....	.....	300	.....	.....	50	.....	.....	.....	50	.....	.....	1,6000 00
840	.....	.....	1680	.....	.....	490	.....	.....	.....	180	.....	.....	8,448 00
120	.....	.....	50	.....	....	12	.....	.....	.....	20	.....	.....	270 00
1950	.....	.....	2285	.....	.....	432	.....	.....	.....	380	.....	.....	11,016 00
2805	.....	.....	1915	.....	.....	135	.....	.....	.....	875	.....	.....	9,063 50
450	.....	.....	850	.....	.....	35	.....	.....	.....	.....	.....	.....	3,595 00
220	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	44 00
940	.....	240	1020	1260	.....	62	.....	.....	23	1050	.....	.....	5,138 00
1280	.....	500	1000	.....	.....	100	.....	.....	13	1000	.....	.....	5,125 00
2040	.....	150	400	.....	.....	75	.....	.....	15	525	.....	.....	2,549 50
5360	.....	375	350	2500	.....	36	.....	.....	7	290	.....	.....	2,918 50
.....	10500	.....	110	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,490 00
.....	4200	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	420 00
.....	.....	.....	3	.....	.....	3	.....	.....	.....	1000	.....	.....	521 00
525	.....	50	300	.....	400	70	.....	.....	.....	1000	.....	.....	2,042 00
.....	.....	40	9	100	200	35	.....	.....	.....	150	.....	.....	236 40
1950	.....	16000	100	.....	200	305	.....	.....	.....	3900	.....	.....	4,627 00
2800	.....	800	466	1300	1400	500	.....	.....	.....	170	.....	.....	4,219 00
800	.....	900	180	2000	800	7	.....	.....	.....	509	.....	.....	1,377 50
.....	.....	.....	.....	4200	40	2	.....	.....	.....	27	.....	.....	273 90
.....	.....	.....	280	12250	1450	671	.....	.....	.....	328	.....	.....	4,119 00
500	.....	5400	20	3700	4250	1460	.....	.....	.....	780	.....	.....	5,751 00
1490	.....	800	8	29400	300	600	.....	.....	.....	111	.....	.....	4,015 50
720	.....	8000	.....	84800	500	.....	.....	.....	.....	153	23	1380	6,462 50
.....	.....	620	.....	26600	2300	.....	240	.....	.....	110	13	780	2,209 40
.....	6000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	600 00
.....	.....	.....	.....	21100	.....	.....	.....	.....	201	.....	.....	.....	1,869 00
.....	.....	.....	.....	35360	.....	.....	.....	.....	175	.....	.....	.....	2,646 60
.....	.....	.....	.....	15100	.....	.....	.....	.....	95	.....	.....	.....	1,191 00
.....	.....	.....	.....	60100	.....	.....	.....	.....	.....	.....	.....	.....	3,606 00
.....	.....	.....	.....	7000	1800	.....	40	.....	32	.....	.....	.....	627 20
.....	.....	.....	.....	640	5800	.....	160	.....	20	.....	.....	.....	459 20
.....	.....	.....	.....	7200	6100	.....	400	.....	28	.....	.....	.....	914 00
230	.....	1160	.....	10425	5650	.....	3140	110	17	.....	.....	.....	1,388 90
380	.....	2200	.....	16000	4800	.....	8476	816	15	.....	.....	.....	2,228 04
540	.....	3300	.....	15750	3100	.....	1680	576	18	.....	.....	.....	1,659 96
630	.....	3675	.....	5750	1200	.....	1875	240	12	.....	.....	.....	963 90
1000	.....	8375	.....	11875	1000	.....	2090	425	20	.....	.....	.....	1,727 70
32235	21700	52585	11576	375410	41290	5230	18101	2167	1291	12608	436	26160	122,731 20

RETURN of Fishing Stations, Number and Value of Fishing Boats and Nets, together with Number of Fishermen employed on the Coast and Inland Waters of the Province of Quebec from St. Lawrence to

NAMES OF PLACES.	FISHING BOATS.		Number of Fishermen.	KINDS OF NETS USED.									
				Gill Nets.			Seines.		Brush Fisheries.		Eel Fisheries	
	Number.	Value.		Number.	Fathoms.	Value.	Fathoms.	Value.	Number.	Value.	Number.	Value.
Island of Orleans.		$				$		$		$		$
St. Laurent			8	8	2300	1620	90	75				
St. Jean			9	8	1580	1005					1	50
St. François (south side of island)			15	10	2290	2160					5	92
Argentenay			9	4	820	660					5	122
St. François (north side of island)			6						6	175		
Ste. Famille			11						11	263		
North Coast.												
St. Pierre			4	4	880	800						
Isle Madame			4	4	800	480						
Isle aux Réaux			1	1	200	120						
St. Joachim			22						5	1700	17	417
Ste. Anne			8						2	40	6	105
Chateau Richer			6	1	500	600			5	102		
Bay St. Paul and neighboring lakes			57								36	870
Ile aux Coudres			84						33	340	84	520
St. Irenée			18						18	200		
Les Eboulements			65						31	330	44	430
Malbaie			16	1	100	18			15	150		
St. Fidèle			8	2	210	46			6	75		
St. Siméon			9	3	300	60			6	70		
Port aux Quilles			1	1	100	25						
Baie des Rochers			1						1	10		
Island waters, County Charlevoix												
Saguenay Division.												
Rivière aux Canards	2	25	2						2	45		
Anse Ste. Catherine	2	25	2						2	50		
Tadoussac	3	45	3						2	40		
Pointe Rouge	2	50	4	2	150	150						
Moulin Baude	1	10	1	1	80	60						
Pointe à la Cariole	1	15	1	1	80	80						
Anse au Pilote	2	30	3	2	130	100						
Petites Bergeronnes (anglers)												
Bon Desir	2	25	2						2	45		
Escoumains	7	84	7	4	274	152			4	84		
Baie des Bacons			4						4	150		
Sault au Mouton			1						1	40		
Mille Vaches	1	10	3						3	75		
Pointe Boisvert	1	10	3	1	140	75			2	60		
Portneuf	2	38	3	2	212	107						
Sault au Cochon	1	20	1	1	140	70						
Pointe Colombier	1	600	3	2	184	92						
Bersimis	2	25	2						2	30		
Inland waters												
Lake St. John Division.												
*St. Joseph d'Alma to Roberval			380	300	9000	1500						
Totals	30	1002	528	363	20470	9980	90	75	163	4074	198	2606

* 100,000 pounds winninish included.

with the Yield, Value and Kinds of Fish, &c., on the North Shore of the River **Bersimis,** during the Year, 1889.

Kinds of Fish.												Fish Products		Value.
Salmon, lbs.	Trout, lbs.	Shad, lbs.	Herring, brls.	Eels, lbs.	Sturgeon, lbs.	Sardines, brls.	White Fish and Barfish, lbs.	Pickerel, lbs.	Pike, lbs.	Coarse and Small Fish, brls.	Fish for Manure, brls.	Porpoise Skins, No.	Porpoise Oil, Galls.	$ cts.
840	.....	8700	.....	12000	200	.....	12480	2436	.....	....	.....	....	.....	2,566 56
832	.....	6140	.....	14800	.....	.....	11880	2748	.....	....	.....	....	.....	2,538 08
376	.....	2900	.....	15500	.....	.....	8008	2916	.....	....	.....	....	.....	1,994 80
112	.....	900	.....	8350	.....	.....	5280	1260	.....	...	.....	....	.....	1,075 40
.....	.....	.....	.....	1000	800	.....	1592	840	.....	24	.....	....	.....	357 76
.....	.....	.....	.....	1550	3600	.....	5112	2356	.....	124	.....	....	.....	1,231 32
96	.....	200	.....	7400	.....	.....	6360	1440	.....	....	.....	....	.....	1,070 40
448	.....	3250	.....	6800	3200	.....	8040	1200	.....	....	.....	....	.....	1,599 80
.....	.....	.....	.....	1400	2000	.....	4800	480	.....	....	.....	....	.....	616 80
.....	.....	.....	.....	26606	.....	.....	1080	360	.....	...	.....	....	.....	1,704 36
.....	.....	.....	.....	2250	.....	.....	1200	540	.....	11	.....	....	.....	296 40
16	.....	80	.....	3000	10000	.....	31440	6516	.....	133	.....	....	.....	4,093 16
.....	52400	.....	.....	19700	.....	.....	.....	.....	.....	.....	.....	....	.....	6,422 00
.....	.....	.....	.....	9400	.....	120	.....	.....	.....	40	691	146	8760	5,477 50
.....	.....	.....	3	.....	.....	100	.....	.....	.....	....	1200	....	.....	912 00
.....	.....	.....	6	6000	.....	60	.....	.....	.....	10	1500	...	.....	1,344 00
400	.....	.....	30	.....	.....	25	.....	.....	.....	20	1300	....	.....	985 00
200	.....	.....	10	.....	.....	10	.....	.....	.....	18	450	....	.....	389 00
260	.....	.....	6	.....	.....	10	.....	.....	.....	10	400	2	120	392 00
140	1000	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	....	.....	128 00
.....	4000	.....	1	.....	.....	1	.....	.....	.....	....	50	....	.....	432 00
.....	†35000	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	....	.....	3,500 00
396	.....	.....	15	.....	.....	5	.....	.....	.....	....	30	....	.....	169 20
270	500	.....	12	.....	.....	10	.....	.....	.....	....	60	....	.....	212 00
180	2000	.....	25	.....	.....	.....	.....	.....	.....	....	500	150	9000	4,786 00
10062	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	....	.....	2,012 40
3294	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	....	.....	658 80
2700	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	....	.....	540 00
5472	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	....	.....	1,094 40
.....	2000	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	....	.....	200 00
.....	.....	.....	21	.....	.....	5	.....	.....	.....	....	25	....	.....	111 50
3564	300	.....	152	.....	.....	15	.....	.....	.....	....	300	....	.....	1,545 80
.....	.....	.....	130	.....	.....	25	.....	.....	.....	....	50	....	.....	620 00
.....	.....	.....	12	.....	.....	13	.....	.....	.....	....	20	....	.....	97 00
.....	.....	.....	22	.....	.....	10	.....	.....	.....	....	200	....	.....	218 00
3348	.....	.....	400	.....	.....	20	.....	.....	.....	....	150	....	.....	2,404 60
2484	1000	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	....	.....	596 80
2808	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	....	.....	561 60
2970	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	....	.....	594 00
360	.....	.....	13	.....	.....	.....	.....	.....	.....	....	30	....	.....	139 00
.....	25000	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	....	.....	2,500 00
.....	10000	.....	.....	.....	.....	.....	40000	100000	40000	650	.....	....	.....	20,150 00
41628	133200	22170	858	135756	19800	429	137272	123092	40000	1040	6956	298	17880	78,337 44

† Estimated.

RETURN of Fishing Stations, Number and Value of Fishing Boats and Nets, extending from **Quebec** to **Upper**

NAMES OF PLACES.	FISHING BOATS.		Number of Fishermen.	KINDS OF NETS USED.								
				Gill Nets.			Seines.		Brush Fisheries.		Eel Fisheries.	
	Number.	Value.		Number.	Fathoms.	Value.	Fathoms.	Value.	Number.	Value.	Number.	Value.
		$				$		$		$		$
Richelieu County (including St. Francis and Yamaska Rivers)	70	280	85	17	180	69	330	155	....	.....	239	412
Verchères	6	90	12	....	.....	....	170	115	....	.....	....	.....
Chambly and Iberville (including Richelieu River)	28	374	10	....	.....	.....	300	305	....	.....	1	3000
Chateauguay	45	810	90	5	110	15	447	447	....	.....	....	.....
Beauharnois	47	900	122	41	.....	.....	570	960	....	.....	....	.....
Missisquoi Bay	10	90	28	....	.....	.....	814	330	....	.....	....	.....
Magog and Brome	75	750	100	....	.....	.....	.....	.....	....	.....	....	.....
Sherbrooke and Megantic	20	300	150	....	.....	.....	.....	.....	....	.....	....	.....
*Three Rivers	47	410	40	94	1415	470	.....	.....	....	.....	25	75
Berthier, Joliette and Montcalm	43	370	11	....	.....	.....	370	665	....	.....	....	.....
Terrebonne	256	1536	386	....	.....	.....	.....	.....	....	.....	14	38
Montreal, from Longueuil to Lachine Rapids	14	60	40	....	.....	.....	170	110	....	.....	11	11
River Beaudet	....	.....	2	....	.....	.....	60	30	....	.....	....	.....
Lake of Two Mountains (including Isle Perrot)	38	392	45	80	1080	185	.....	.....	....	.....	1	4
Lower Ottawa (including inland waters of County Argenteuil.	16	15	22	50	1140	420	.....	.....	....	.....	....	.....
Upper Ottawa	80	500	95	300	3200	2000	.....	.....	....	.....	....	.....
Gatineau Lakes	....	.....	.....	....	.....	.....	.....	.....	....	.....	....	.....
Totals	795	6877	1238	587	7125	3159	2940	2817	....	.....	291	3540

*30,000 bushels tom cods.

together with the Yield, Value, and Kinds of Fish, &c., within the District **Ottawa,** during the year 1889.

Kinds of Fish.										Value.
Trout, lbs.	Shad, lbs.	Eels, lbs.	Sturgeon, lbs.	White Fish, lbs.	Maskinonge, lbs.	Bass, lbs.	Pickerel, lbs.	Pike, lbs.	Coarse and Small Fish, lbs.	$ cts.
.....	3000	49000	100000	360	4700	1450	13200	15800	152000	15,659 80
.....	2000	326000	20000	10000	10000	3000	4000	34000	90000	27,100 00
.....	.....	59900	300	.....	80	945	1735	3710	90600	6,681 10
.....	.....	40000	80000	.....	7000	20000	32000	50000	300000	22,240 00
.....	.....	44400	41250	.....	5550	7700	11350	28650	252000	15,607 50
.....	11375	.....	.....	.....	.....	.....	22000	.....	33400	3,004 50
16000	.....	2000	.....	.....	.....	15500	151000	.....	42000	12,970 00
65200	4150	16500	14000	4500	22800	23400	39950	31300	48300	17,142 00
55000	60000	20000	75000	.....	2000	1000	10000	30000	505000	50,230 00
6000	.....	30450	100	.....	200	3000	4300	400	21200	3,539 00
41000	3100	1975	1760	.....	.....	5575	3330	3920	.....	5,240 40
.....	11100	100200	25000	1500	50000	8500	30300	30200	110000	18,436 00
.....	.....	20000	400	.....	300	250	300	250	.....	1,287 50
.....	.....	3000	7425	.....	7100	5200	11470	11150	31900	3,566 20
11600	850	2500	24000	3100	1400	1000	7400	15100	55000	6,042 00
.....	.....	9500	8000	.....	18000	.....	15025	.....	45600	4,399 50
140000	.....	.....	.....	18500	.....	14400	.....	60400	.....	19,364 00
334800	95575	725425	397235	37960	129130	110920	357360	314880	1777000	232,509 50

COMPARATIVE RECAPITULATION

Of the Quantity and Value of the different Fisheries, from **Cape Chatte to Point Lévis,** in 1888 and 1889.

Kinds of Fish.	Prices for 1889.	1888.		1889.	
		Quantity.	Value.	Quantity.	Value.
	$ cts.		$ cts.		$ cts.
Shad.. ..... Lbs.	0 06	103,456	6,207 36	52,585	3,155 10
Eels..... Lbs.	0 06	443,548	26,612 88	375,410	22,524 60
Herring..... Brls.	4 00	13,628	54,512 00	17,576	46,304 00
Sturgeon..... Lbs.	0 06	117,250	7,035 00	41,290	2,477 40
Sardines.. ..... Brls.	3 00	2,656	7,968 00	5,230	15,690 00
Trout ..... Lbs.	0 10	21,600	2,160 00	21,700	2,170 00
Salmon..... Lbs.	0 20	25,130	5,026 00	32,235	6,447 00
Whitefish and bar fish..... .... Lbs.	0 08	50,664	4,053 12	18,101	1,448 08
Pickerel..... Lbs.	0 06	5,440	326 40	2,167	130 02
Porpoise skins..... No.	4 00	83	322 00	436	1,744 00
do oils. .... Galls.	0 40	4,980	1,992 00	26,160	10,464 00
Coarse and mixed fish..... Brls.	3 00	11,219	33,657 00	1,291	3,873 00
Fish for manure.. .... Brls.	0 50	4,646	2,323 00	12,608	6,304 00
Seal skins..... No.	1 00	24	24 00	.....	.....
do oil.....Galls.	0 40	172	68 80	.....	.....
Total Value of the Fisheries.....	.....	.....	152,297 56	... .	122,731 20
Decrease..	.....	.....	.....	.....	29,566 36

COMPARATIVE RECAPITULATION

Of the Quantity and Value of the different Fisheries, from **Quebec** to **Bersimis,** in 1888 and 1889.

Kinds of Fish.	Prices for 1889.	1888.		1889.	
		Quantity.	Value.	Quantity.	Value.
	$ cts.		$ cts.		$ cts.
Shad..... Lbs.	0 06	11,835	710 10	22,170	1,330 20
Eels..... Lbs.	0 06	142,237	8,534 22	135,756	8,145 36
Herring..... Brls.	4 00	134	536 00	858	3,432 00
Sturgeon..... Lbs.	0 06	26,200	1,572 00	19,800	1,188 00
Sardines..... Brls.	3 00	124	372 00	429	1,287 00
Salmon..... Lbs.	0 20	27,906	5,581 20	41,628	8,325 60
Trout..... Lbs.	0 10	131,500	13,150 00	133,200	13,320 00
Pickerel..... .... Lbs.	0 06	111,230	6,673 80	123,092	7,385 52
Pike ..... Lbs.	0 05	50,000	2,500 00	40,000	2,000 00
Bar and whitefish..... Lbs.	0 08	161,648	12,931 84	137,272	10,981 76
Winninish.. ..... Lbs.	0 06	100,000	6,000 00	100,000	6,000 00
Coarse and mixed fish..... Brls.	3 00	1,204	3,612 00	1,040	3,120 00
Fish as manure..... .... Brls.	0 50	10,370	5,185 00	6,956	3,478 00
Porpoise skins..... No.	4 00	345	1,380 00	298	1,192 00
do oil..... Galls.	0 40	5,760	2,304 00	17,880	7,152 00
Total Value of the Fisheries.....	.....	.....	71,042 16	.....	78,337 44
Increase.....	.....	.....	.....	.....	7,295 28

COMPARATIVE RECAPITULATION

Of the Quantity and Value of the different Fisheries, from **Quebec** to **Upper Ottawa**, in 1888 and 1889.

Kinds of Fish.		Prices for 1889.	1888.		1889.	
			Quantity.	Value.	Quantity.	Value.
		$ cts.		$ cts.		$ cts.
Shad	Lbs.	0 06	398,960	23,937 60	95,575	5,734 50
Eels	"	0 06	904,510	54,270 60	725,425	43,525 50
Sturgeon	"	0 06	440,770	26,446 20	397,235	23,834 10
Trout	"	0 10	385,450	38,545 00	334,800	33,480 00
Whitefish	"	0 08	81,160	6,492 80	37,960	3,036 80
Maskinongé	"	0 06	136,160	8,169 60	129,130	7,747 80
Bass	"	0 06	186,775	11,206 50	110,920	6,665 20
Pickerel	"	0 06	538,795	32,327 70	357,360	21,441 60
Pike	"	0 05	338,530	16,926 50	314,880	15,744 00
Mixed fish	"	0 03	2,063,400	61,902 00	1,777,000	53,310 00
Tom Cod	Bush.	0 60	75,000	45,000 00	30,000	18,000 00
Total Vaiue of the Fisheries				325,224 50		232,509 50
Decrease for 1889						92,715 00

RECAPITULATION.

Yield and Value of the Fisheries of the **Province of Quebec** (*Exclusive of the Gulf Division*) for 1889.

Kinds of Fish.		Quantity.	Value.
			$ cts.
Shad	Lbs.	170,330	10,219 80
Eels	"	1,236,591	74,195 46
Herring	Brls.	12,434	49,736 00
Sturgeon	Lbs.	458,325	27,499 50
Sardines	Brls.	5,659	16,977 00
Trout	Lbs.	489,700	48,970 00
Salmon	"	73,863	14,772 60
Pickerel	"	482,619	28,957 14
Pike	"	354,880	17,744 00
Whitefish and Bar fish	"	193,333	15,466 64
Maskinongé	"	129,130	7,747 80
Bass	"	110,920	6,655 20
Tom Cod	Bush.	30,000	18,000 00
Winninish	Lbs.	100,000	6,000 00
Mixed fish	Brls.	11,216	60,303 00
Fish as manure	"	19,564	9,782 00
Seal skins	No.		
do oils	Galls.		
Porpoise skins	No.	734	2,936 00
do oils	Galls.	44,040	17,616 00
Total in 1889			433,578 14
do 1888			548,564 22
Decrease			114,986 08

GENERAL RECAPITULATION.

YIELD and VALUE of the Fisheries in the **Whole Province of Quebec**, for 1889.

Kinds of Fish.		Quantity.	Value.
Cod	Cwt.	185,803	743,212 00
Herring, pickled	Brls.	36,356	145,424 00
do smoked	Boxes.	1,435	358 75
Mackerel	Brls.	4,602	69,030 00
Haddock	Cwt.	1,749	6,996 00
Halibut	Lbs.	90,851	9,085 10
Salmon, pickled	Brls.	548	8,768 00
do fresh	Lbs.	551,080	110,216 00
Shad	do	170,330	10,219 80
Eels	do	1,236,591	74,195 46
do pickled	Brls.	150	1,500 00
Sardines	do	5,659	16,977 00
Smelt	Lbs.	171,160	8,558 00
Sturgeon	do	458,325	27,499 50
Trout	do	489,700	48,970 00
do	Brls.	123	1,230 00
Winninish	Lbs.	100,000	6,000 00
Bar and whitefish	do	193,333	15,466 64
Maskinongé	do	129,130	7,747 80
Bass	do	110,920	6,655 20
Pickerel	do	482,619	28,957 14
Pike	do	354,880	17,744 00
Tom cod	Bush.	30,000	18,000 00
Cod, tongues and sounds	Brls.	100	1,000 00
Lobsters, canned	Lbs.	593,950	71,274 00
Small and mixed fish	Brls.	11,216	60,303 00
Sealskins	No.	26,333	26,333 00
Porpoise skins	No.	777	3,151 00
Fish oils	Galls.	355,897	142,358 80
Fish used as bait and manure	Brls.	113,322	104,916 00
Fish used for local consumption	do	21,012	84,048 00
Total for 1889			1,876,194 19
do 1888			1,860,012 96
Increase			16,181 23

APPENDIX No. 7.

ONTARIO.

SYNOPSES OF FISHERY OVERSEERS' REPORTS IN THE PROVINCE OF ONTARIO FOR THE YEAR 1889.

LAKE SUPERIOR DIVISION.

Overseer W. C. Dobie has charge of that portion of Lake Superior extending from Pigeon River to State Island. He reports the season's fishing successful and remunerative. Fishing began early (the ice leaving on the 22nd of April) and continued till the end of December, so that with fewer men and boats, a larger catch was effected. It was specially remunerative in Thunder Bay. This is ascribed to the fact that very little fishing has been done there for a couple of years. The blasting operations carried on at Caribou Island in connection with the building of a breakwater have been completed. This accounts for the run of whitefish returning to this locality. The placing of a guardian at Rossport, the only shipping place in this division besides Port Arthur, ensured a strict observance of the close season. Mr. Dobie favors the opinion that the decrease of fish in certain localities is due to fluctuations in various localities, and to the fact that nets are sometimes driven from their moorings during storms when full of fish, lodging on reefs, where other fish will not stay while any vestiges of the old nets or decayed fish remain. Many old fishermen share the officer's opinion on this point. They have also found out by experience that a larger weight of fish can be caught with larger mesh than smaller ones, and it is recommended that merchants selling nets of illegal-sized mesh be made liable to a penalty. There is an increased demand for pound nets. These are, however, mostly used for sturgeon and pickerel in shoal water, where gill-net fishing is impossible. Although this is a large division, the fishing grounds are somewhat limited. Owing to the great depth of water the reefs and shoals favorable to fishing operations are few compared with those of Lake Huron, where fishing can be carried on in almost any part of the lake. The total value of the fisheries is given at $108,984, exceeding that of 1888 by $40,000.

Overseer Jos. Wilson's division extends from Slate Island, on Lake Superior, to Collin's Inlet, Georgian Bay. He reports whitefish fully as numerous as during the previous season. Sturgeon are not so plentiful as they were, owing undoubtedly to their having been fished during the spawning time. The close seasons were well observed by fishermen between the Sault and Michipicoton River, as well as by those at Jackfish Bay; but the same cannot be said about Peninsula Harbor and Port Caldwell, which were frequented by unlicensed fishermen. On Lake Huron the licensees observed the law, but much illegal fishing was carried on by Indians or half-breeds, and even a few white men, who seemed determined to fish, irrespective of close season. Their headquarters were at Grant's Island and near the mainland opposite. For proper protection of the fish during the close seasons, nothing short of steam tugs will enable the fishery officers to efficiently perform their duties. Guardian Strain rendered valuable services; he seized several nets during the close season. With the exception of Nepigon River, nothing has been done by the Local Government for the protection of speckled trout in the rivers of the north shore of Lake Superior. Large numbers are caught in nets and exported to the United States, where they bring a high price. Mr. Wilson again urges the necessity of adopting a

close time for sturgeon. The total value of both divisions under his charge amounts to $84,223, that is to say: $64,862 in Lake Superior and $19,361 in Manitoulin Division.

MANITOULIN ISLAND DIVISION.

Overseers John Marks, of St. Joseph Island, and *Alex. Brinkman*, of Manitowaning, have charge of the waters around Manitoulin Island. The former found it impossible to obtain reliable data from the fishermen of his district, some of them having left for the woods immediately after the fishing season. He states that fishing was fully as good as last year.

Mr. Brinkman reports the close seasons as fairly well observed. Some of the pound-net fishermen neglected to remove their stakes. He ordered them to do so, as it would have endangered navigation. Squaw Island, with its five tugs and forty-five boats manned by 155 fishermen, using over one hundred thousand fathoms of nets, is the principal fishing ground of this division. The value of its fisheries, consisting chiefly of whitefish and salmon trout, is $116,000. South Bay and Duck Islands stations come next, the former with two tugs and ten boats, yielding $70,000; the latter with four tugs and twenty boats, producing $55,000 Forty pound nets were fished in the whole of this division. The total value of the fisheries is given at $328,386.

GEORGIAN BAY DIVISION.

Overseer F. G. M. Fraser, who has charge of that part of Georgian Bay between Collins Inlet and Victoria Harbor, reports a serious decline in the yield of whitefish, which he ascribes to over-fishing and illegal practices during the close season. He is of the opinion that poaching is increasing, and that the officers are powerless to check it without the use of a steam craft. Whitefish is killed in close season by spearing, and to chase such offenders in the fall is a hard as well as a dangerous work. During the month of November this officer found a large number of gill nets full of whitefish between Indian Harbor and Shawanaga Islands. These nets had evidently been used during the close season, before being washed ashore on the shoals by the strong gales which prevailed at that time. It is needless to state that both the nets and the fish were completely destroyed. Although the catch of whitefish seems large, when it is taken into consideration that 350,000 fathoms of nets are used in this district, it should be larger. No mesh under 5 inches should be used for whitefish. During the spring close season Mr. Fraser seized at Moose River a very destructive pound net, full of pickerel, which were liberated alive. Small creeks and inlets are dammed up, and pickerel caught during the close season are penned there for safe-keeping till the close season is over, when they are shipped to some fishing station. The increased catch in bass, pickerel and pike is due to a more active prosecution of these fisheries, and not to an increase of fish. There are no fish-ways in this division. Large quantities of sawdust and rubbish are allowed to escape from the Parry Sound and Muskoka mills. The total value of the fisheries is put down at $120,972.

Overseer Samuel Fraser, who has charge of that part of Georgian Bay extending from Victoria Harbor to Allenwood, reports the yield of fisheries in his division about the same as last year. Fish seem as plentiful now as they have been during the last ten years. The individual catch may not be quite as large, as compared with the increased number of boats and men in the business; yet, the aggregate quantity is fully up to the standard. The close seasons were fairly observed by the regular fishermen; but during the spring close time poachers were out the moment he left the grounds, and fished as long as pickerel could be caught. The same may be said of whitefish, because there was no officer there to prevent illegal fishing. Herring fishing was good; one man alone took ninety barrels. There must have been at least 500 barrels caught by unlicensed fishermen. Pickerel is coming into great favor as table fish, and is fished through the winter, giving employment to a great many persons who otherwise would be idle. Although the demand for this fish

increases, there seems to be no decline is the supply. It is reported that bass are caught in hoop-nets and shipped with mudpouts and other coarse fish, which cover the bass. The total value of the fisheries in this division is given at $33,869.

Overseer G. S. Miller's division comprises that part of Georgian Bay extending from Allenwood to Colpoy's Bay. He states that, with the exception of whitefish, which has almost entirely disappeared from that part of the coast of Georgian Bay, the yield will exceed that of the previous year. The use of small mesh nets is more prevalent now than ten or twelve years ago. Several fishermen from Lake Huron have of late come to this division with small mesh nets, and the other fishermen follow their example. If this is not soon remedied the valuable fisheries of Georgian Bay will soon be a thing of the past, as is the case in Lake Michigan. During the close season, with the assistance of Capt. Holmes and the Government cruiser, Mr. Miller was enabled to seize several nets and one boat. Fines were also imposed on the owners.

The fisheries in this district are valued at $91,484, an increase of 100 per cent. over last year.

LAKE HURON DIVISION.

Overseer R. H. Murray, who has charge of that portion of the coast of Lake Huron extending from Stoke's Bay to Point Clark, sent no report.

Overseer Hugh McFayden, who has charge of the Saugeen River, reports that, owing to rainy weather in June, the waters rose as high as during the spring, thus shortening the fishing season. One fish-way was erected during the summer, which will, it is hoped, prove efficient. The sawdust nuisance is abating.

Overseer H W. Ball, of Goderich, has charge of that part of the Lake Huron shore extending from Southampton to Goderich. He reports the catch at Kincardine as much below the average. This he attributes to stormy weather, and to the wasteful destruction of young whitefish by herring seines at Sauble Beach. It is stated that hundreds of barrels of young fish were thus taken last season and buried along the Sauble shore. An average yield is returned for Goderich and Southampton. Gill-net fishermen complain of the use of pound nets with smaller meshes than theirs, and contend that if the former are allowed to use such engines, the mesh should be identical with that of the gill-nets, in order to afford protection to the young fish.

The yield of the fisheries of this district is valued at $43,600.

Overseer H. B. Quarry, of Parkhill, who has charge of that portion of Lake Huron from Goderich to Blue Point, states that he experienced great difficulties in obtaining accurate returns of the catch from the fishermen of his division. He returns an average yield, valued at about $10,726.

Overseer J. C. Pollock, whose division extends from Blue Point, on Lake Huron, to Baby's Point, on River St. Clair, reports a falling off in the fisheries. This he ascribes to the excessive use of pound-nets on both sides of his division, and to the oil refinery at Sarnia, which allows the refuse to pollute the waters of the St. Clair River. Fishermen complain of being compelled to pay to the Indians from $30 to $70 every season for the privilege of having their shanties on the beach of the reserve.

LAKE AND RIVER ST. CLAIR DIVISION, INCLUDING THAMES RIVER.

Overseer C. W. Raymond attends to the upper part of Lake St. Clair. With the exception of coarse fish, he reports a small catch. This he attributes to the fact that the close season begins so early that the seiners have no chance to fish, and if they use their seines after the 15th of April they are liable to injure the spawning beds. He would rather see them fish early in the spring, and prohibit seining all summer.

Overseer A. Quenneville's district comprises that part of Lake St. Clair near the mouth of Thames River. He reports a poor catch, owing to the pound-nets between Belle River and Detroit River.

Overseer T. McQueen's division extends from the mouth of Thames River to Lewisville. Twenty stations were fished, giving employment to 100 men. The principal kinds of fish caught are pickerel, pike and coarse fish. Prices in the American markets were good. The only complaint from the fishermen was about sunken logs and limbs of trees; but, generally, the season was favorable. The close season was well observed, and no infractions of the law came to this officer's notice.

Overseer John Crotty, who has charge of the central portion of the Thames River, between Lewisville and Wardsville, reports a small catch, owing to ice jams in the spring. No violations of the fishery laws came to his notice.

Overseer P. McCann, who has charge of the upper portion of the Thames River, reports fishing satisfactory. The laws were well observed, with the exception of two cases of alleged spearing, in which he was unable to secure sufficient evidence to convict the parties concerned. There are fourteen fish-ways in this division, four of which were put in this season under this officer's supervision. Two other mill-owners have been notified to replace their old fish-passes by new ones, one of which will be completed before the next run of fish. The fisheries of the Thames River division are valued at $30,711; an increase of 30 per cent.

DETROIT RIVER DIVISION.

Overseer Joseph Boismier, who has charge of the Detroit River, states that the catch of whitefish was not quite so good as in 1888. Herrings show a large increase. This officer believes that, fishermen undervalue their catch. They complain of the length of the close season for whitefish. The total value of the fisheries of this division is about the same as last year, $19,191.

LAKE ERIE DIVISION.

Overseer David Girardin, who succeeded James Cummins, has charge of the Pelee Island division. He reports an enormous catch of herring in the spring, but prices were then very low. The fall catch, when prices were higher, was light, owing to the heavy winds which kept the fish off shore. The catch of whitefish was much in excess of that of last year. The total value of the fisheries of this division is set down at $66,979.

Overseer Wm. Prosser's division (*Pelee Main*) extends from the mouth of Detroit River to the county line of Kent. The falling off in the catch of herring cannot properly be attributed to a scarcity of fish; but, there being no market for them in the spring, fishermen lowered their pound nets and let them escape, so that the returns comprise only the fall catch. The close seasons were well observed. The catch of herring is given at two and a half million pounds. The total value of the fisheries foots up to $140,950.

Overseer John McMichael, has charge of the *Kent* and *Elgin* divisions. He states that the fishing season was long, lasting in fact to the very end of December; but, the unusually severe easterly gales which prevailed at times kept the waters on shore so very rough that, fishing could hardly be carried on. In some cases the damaged nets could not be reset for five weeks. Four of the 97 pound nets licensed in this division were not set at all, while the others remained unfished half the time. Some fishermen complain of sawdust and rubbish from Coatsworth mill being allowed to wash away in the lake. The total value of the fisheries of the Kent division is valued at $112,091, and that of Elgin at $100,436.

Overseer David Sharp, who has charge of the Norfolk Division, states that the fishermen above Long Point caught more fish than ever before, while those east of Long Point did not do as well as last year. This he attributes to the strong winds which continually blew from the east. The close seasons were well observed; one party only being fined for having bass in his possession during the close time. These fish were caught at Long Point, outside of his division. It was reported that different parties went there for the same purpose without being checked. As sturgeon is becoming one of the principal commercial fish of Lake Erie, Overseer Sharp

recommends its protection during the breeding time. The total value of the fisheries of this division is put down at $49,235.

Overseers W. A. McCrae and *W. P. Croome* have charge of Grand River. The former was unable to make a report through illness. The latter states that the catch was fully up to that of last year. The close seasons were fairly observed. The fish-ways were badly damaged last spring; but all the mill-owners were notified to put them in proper repair. The only abuse in this division is the dye liquid escaping from manufactories in the stream. There is no direct evidence that it is injurious to the fish. In most instances it would be a very expensive affair for the owners to pump this refuse into properly constructed sink-holes.

LAKE ONTARIO DIVISION.

Overseer Fred. Kerr's division extends from Moulton Bay, on Lake Erie, to Burlington Beach, on Lake Ontario, including the Niagara River. There was a great run of common herring, more than noticed for the past ten years; these fish were of large size and fetched good prices. Ciscoes were not so plentiful as formerly; they have been over-fished, and as there is no close season for them, some other means of protection should be adopted, otherwise this valuable fishery will be injured. The run of whitefish was of short duration, but the fish were superior both in quality and size. Some good catches were made at Moulton Bay. Quite a number of salmon trout were caught at Grimsby; they seem to be a different variety, and are supposed to be the outcome of the fry deposited in Lake Ontario. Should this contention prove correct, a good run may be expected next year, if proper sized nets are used. Large quantities of sturgeon were caught, mostly with night lines, at Niagara; some fishermen took as much as seven tons. All these fish were disposed of in Buffalo at fair prices.

On the Lake Erie portion of this division fishing was very poor, all kinds of fish having greatly fallen off during the past few years. The reasons ascribed for this depletion are the numerous pound nets in the upper part of the lake, and the excessive fishing carried on on the American side by the Buffalo fishermen, who, with improved nets and tugs, even encroach on our waters. Overseer Kerr made a large seizure of gill nets at Point Abino from these foreign poachers during the early part of the summer, which somewhat checked their ardor. With the exception of a couple of seizures, he reports no violations to the close seasons. The total value of the fisheries of this division is given at $53,526.

Overseer William Sargent's division extends from Burlington Beach to Port Credit on, Lake Ontario. Herring and ciscoes are the staple fish of this district, and the catch of over *one million* pounds exceeds that of previous years. Salmon trout seem to have returned to these waters; a few being caught this season, some weighing twenty-five pounds. Whitefish, though scarce, are increasing. The total value of the fisheries of this division is reckoned at $53,894.

Overseer William Helliwell has charge of that part of the coast of Lake Ontario fronting on the County of York. He reports a good year for fishermen who realized remunerative prices for their labor. The several close seasons were rigidly enforced. He suggests that licensed fishermen be made to keep better accounts of their catch. Some people advise a reduction in the mesh of herring nets, but this overseer thinks three inches quite small enough. These fisheries are valued at $10,314.

Overseer Charles Gilchrist has charge of that part of Lake Ontario fronting on the County of Northumberland and of Rice Lake, in rear of Cobourg. He reports a poor catch, which can only be ascribed to a scarcity of fish. Some years ago, five fishermen at Presqu'Isle Bay, with 2,000 fathoms of gill nets each, would average 3,000 lbs. of fish a week per man. The decline has been so steady that this ground is now completely abandoned.

Rice Lake is still keeping up its reputation. The quantity of yellow bass caught through the ice by Indians is enormous. They peddle these fish through the country, exchanging them advantageously for flour and pork. During the month of June, when summer fishing began, 496 permits were issued, including 26 to foreigners and

100 to Indians. To the best of this overseer's knowledge, no less than 200,000 lbs. of maskinongé and 150,000 lbs. of bass were caught with hook and line. The Otonabee River fisheries of late years have dwindled to nothing. This is justly ascribed to the sawdust and mill rubbish thrown into this beautiful stream by the Peterborough mill-owners. The foul stuff has destroyed all the spawning beds, and fish ova decay with it. While on this subject Mr. Gilchrist writes the following:—

"I beg to call your attention to the great injury done by sawdust and rubbish to Rice Lake and the Otonabee River up to Peterboro'. I have seen articles written by an ex-fishery inspector of the Maritime Provinces, contending that sawdust did not injure rivers nor destroyed fish life. I beg to differ from him, so far as the Otonabee is concerned. Shortly after my appointment as Overseer over Rice Lake and its tributaries (sixteen years ago), the Otonabee River could not be surpassed for bass and maskinongé fishing, particularly at the mouth of the river; that is to say, the east branch. Not more than five years ago, where the water used to be twelve feet deep at low water it is now three inches; and right at the mouth, there is a bed of sawdust about half an acre entirely out of water, extending south for about three hundred yards and east and west for a mile. Last summer, when coming from the west branch of the river to Harwood, my skiff stuck in this sawdust before I got 200 yards. I had to turn back and follow the steamer's track out into the lake and down to Harwood. From the mouth of the river to Peterboro', the spawning beds are one mass of sawdust. The spring freshets drive this sawdust on the drowned lands and marshes where fish deposit their eggs never to be hatched out. Several years ago, the Little Lake, at Peterboro' was a good ground for bass and maskinongé; now it is nothing but a deep sawdust bed. The same can be said of the whole river where fishing steadily declined as sawdust increased. It is a shame that so fine a stream should be ruined to suit the convenience of four mill-owners who could at a trifling expense remedy the evil. Some years ago, accompanied by a competent man, I was sent to enquire about the probable cost of removing this rubbish by combustion. He estimated that for a thousand dollars, a burner could be built to consume all the rubbish; but nothing further was done. Heavy fines were imposed this season on the mill-onwers who refused to comply with the law. It has been calculated that, this season, over three hundred cords of sawdust, &c., was allowed to escape daily in the Otonabee while the mills were running. The mills are now closed down till June next."

The total value of the fisheries of this district is reckoned at $16,793.

Overseer N. Simmons, of Meyersburg, who has charge of the Trent River, states that the catch of coarse fish was inferior to that of 1888, there being no net fishing allowed. Pickerel are not so plentiful; they are prevented from ascending the river by the Miller & Co.'s mill dam, which is still unprovided with a fish-way, although the owners have been repeatedly notified to build one. The fish-pass at Chisholm's Rapids is out of order and should be repaired.

Overseer Geo. B. McDermot has charge of that part of Lake Ontario from Oshawa to Ashbridge's Bay, as well as of Lake Scugog. In the Lake Ontario division, ciscoes and pike are the only kinds of fish sought after. It is to be regretted that a number of fishermen who established fishing stations at Whitby and Frenchman's Bay, had to removed their plant to Bronte, it being found impossible to visit the nets in rough weather, and these being repeatedly carried away by a strong undertow which always happens here after a heavy gale. Fish being plentiful on these grounds the fishermen had built curing and smoke-houses at the above named places; it seems a hardship to be compelled to thus abandon their property. A few salmon were seen in Duffin's Creek this fall, the first noticed during the last three years. The fisheries in this part of his district are valued at $27,494.

The quantity and quality of fish taken in Lake Scugog far exceeds that of last year. The amount of maskinongé and bass killed through the ice was simply wonderful. This wholesale destruction does not seem to have affected the parent stock which were never before noticed to visit the spawning beds in such large numbers as they did last spring. The water of the lake was kept at a higher level during the

summer, owing to the Lindsay mills having been closed for repairs. The result was that the spawning beds did not dry up as usual and fully ninety-five per cent. of the ova deposited was hatched. The lake was literally swarming with maskinongé and bass fry during the latter part of the summer. This shows what could be achieved were the water kept at its natural level. At one time this fall it was apprehended that great destruction of fish life would ensue on account of low water in this fine lake, thirty miles long by seven in breadth, converted into a private pond to run six large turbine water wheels; but fortunately the heavy rains at the end of December raised the level by three feet and a half, removing all danger during the present mild winter. Violations of the close seasons were frequent; nineteen parties were convicted and fines to the amount of $100 imposed. Two of the aggrieved parties appealed against the Police Magistrate's decision, but withdrew their appeal at the last moment, and Mr. McDermott secured costs in the County Court against them. This will have the effect of showing the public that the fishery laws cannot be violated with impunity in the Scugog division. The fish-way built at Lindsay, some years ago, by the Department of Public Works is practically useless, and in a dilapidated condition. This might be remedied during the winter at a small outlay and the overseer urges the Government to attend to it. Overseer McDermot built an efficient fish-way at Balsover on the Talbot River and when the proposed fish-passes are finished on Black River all obstructions to the ascent of fish to their spawning grounds will be removed in this division. The Lake Scugog fisheries for 1889 are valued at $19,800.

PRINCE EDWARD AND BAY OF QUINTÉ DIVISIONS.

Overseer Chas. Wilkins, who has charge of the Bay of Quinté Division, reports that the fisheries of his district have fully kept up with former years. The catch of whitefish, though large, was made in ten days. These fish came earlier than usual, and by the 5th November were all out of the bay. There were loud complaints before the removal of the gill nets east of Deseronto, which completely barred the passage of fish to the upper part of the bay. All the fishways are in good condition, with two exceptions; both promised to repair them by next season. The mill-owners of this district are all complying with the Sawdust Act. Overseer Wilkins again complains of the reluctance with which fishermen give returns of their catch. The total yield of the fisheries of this division is valued at $28,364.

Overseer Joseph Redmond, whose division comprises the waters of Lake Ontario around the county of Prince Edward, returns an average catch of fish, and gives the total value at $26,560, an increase of $2,440 over last year.

LENNOX, ADDINGTON AND FRONTENAC DIVISIONS.

Overseer A. D. Sills, who has charge of the fisheries of the county of Lennox, reports a large increase in the catch of fish in his division, as compared with the previous year. The close seasons were well observed, with one exception, when the nets were promptly seized. No other abuses are reported. The whole fisheries are valued at $8,131.

Overseer R. R. Finkle, whose division comprises that part of Lake Ontario fronting on the township of Ernestown, including Amherst Island, reports a good catch of salmon-trout and whitefish, especially in August. The fish were of an unusually large size, averaging one and a-half pounds more than ever before. The fishermen complied with the regulations. The yield of whitefish which was given last year at 12,000 lbs., is returned at 150,000 lbs. for 1889. The total value of the fisheries in this district is set down at $20,610.

Overseer Geo. Lake, who has charge of part of the inland waters of the County of Frontenac, reports fishing about the same as last season. He is unaware of any abuses, or of any contravention of the fishing regulations. He urges the construction of a fish pass at the foot of Bob Lake.

Overseer Robert Gilbert, who has charge of some eighteen lakes in the upper portion of the County of Frontenac, reports that no licenses for net fishing are issued

in these waters ; the only fishing done during the months of May and October being by angling and trolling. The close seasons are reported to have been well observed. The sawdust from the various mills of this division is not allowed to drift into the streams and lakes. There are no fish-ways.

Overseer H. R. Purcell, who has charge of the lakes of the County of Addington, reports little fishing ; the demand for labor on the railways being more remunerative than angling or trolling. This officer seized and destroyed two hoop-nets and some gill-nets in Loughboro' and Nepean Lakes. The owners could not be identified. The lakes stocked with trout fry are doing well, and he recommends that Beaver and Varty Lakes be stocked with pickerel fry.

WOLFE ISLAND AND KINGSTON DIVISION.

Overseer Thos. Merritt, who has charge of the lake shore frontage of the County of Frontenac, reports a slight increase over the yield of 1888, which would have been greater had not several fishermen been engaged in other pursuits. The close seasons were strictly observed. The only abuse that exists in this division is that American sportsmen, and parties frequenting these waters with steam yachts, invariably have small meshed seines which they use for taking bait for trolling, and in certain localities often catch the fry of salmon-trout, whitefish, and bass. The close seasons were well observed.

Overseer Peter Kiel, who has charge of the fishing grounds around Wolfe Island, states that fish are not decreasing, and that besides the Kingston market being always well supplied at moderate prices, a considerable surplus is sold in the States. The catch of coarse fish at Big Bay was large ; this proves that there is no decline in the supply of fish. The yield of salmon trout at Pigeon Island was not large ; this, however, may be due to the laxity of the licensees in not vigorously prosecuting their business, and to their using inferior fishing gear. Some of the most valuable fishing grounds were left unoccupied ; better inducements having deterred many fishermen from engaging in the risky business of fishing.

ROCKPORT, BROCKVILLE AND CORNWALL DIVISIONS.

Overseers Wallace, Hunt, Poole, McGarity and *Mooney*, have charge of that portion of the River St. Lawrence, extending from Gananoque to Glengarry. Nothing but angling is allowed in these divisions. Although the total value of the fisheries was greater than ever before ; it is still worth more to the people living in the vicinity of the summer resorts. There were two hundred and forty-six boats employing three hundred and thirty-six men to row tourists, who spent more money than all the fish caught is worth. The catch of bass is reported at nearly 50,000 lbs. ; pike, 96,000 lbs.

PRESCOTT, RUSSELL AND CARLETON COUNTIES DIVISION.

Overseers P. St. Pierre, of Point Fortune, *Olivier Miron*, of Alfred, and *W. Boucher*, of South March, have charge of the above named counties fronting on the Ottawa River. The fisheries of this division are not important ; their total value being under $5,000. It is contended that the want of a fishway on the Government dam at Carillon prevents the fish from increasing. Mr. Boucher says, the residents in the vicinity of Carp River would like to have a fish-way built on that stream, so to allow the fish to ascend from the Ottawa.

LEEDS, LANARK AND RIDEAU DIVISIONS.

Overseers W. H. Johnston, Jas. Greer, and Wm. Hicks, have charge of Charleston, Gananoque and other lakes in the County of Leeds. No net fishing is allowed in these waters. Several nets were confiscated in Charleston Lake. The close seasons

were fairly observed. The above officers are of the opinion that the fall close season should commence fifteen days earlier, so as to suit the shoal waters of Charleston Lake.

Overseers Geo. Jeacle, A. E. Mills and Guy Reid, have charge of the Rideau river and Canal. Angling and trolling were good and the fish are on the increase. The close seasons were generally well observed. *Mr. Jeacle* says that residents complain of being denied the privilege of fishing for herring and coarse fish which cannot be taken otherwise than with nets. He favors their request. Several small nets were seized and destroyed. The three fish-ways of this division are in good order; mill-owners comply with the regulations.

Overseer Eph. Deacon, who has charge of Fall Bay and Tay Rivers in Lanark, reports fish plentiful and angling good, but it would be greatly improved were the principal spawning beds, two miles west of Christie's Lake, cleared of the accumulation of sawdust and rubbish from the late John Deacon's mill, although this mill has been shut down for five years; the rubbish remains a hindrance to the spawning fish. *Mr. Deacon* also favors the issuing of permits to residents to fish for their own use.

RENFREW COUNTY DIVISION.

Overseers A. Telfer, of Breaside; and *M. L. Russell*, of Renfrew, attend to the Bonnechére River.

Overseers John Grant and *Arch. Archeson* are in charge of that portion of the Ottawa River fronting on the County of Renfrew.

Overseers Douglas, Bélanger and *Warden Hugh Gallagher's* divisions comprise the inland lakes.

The fisheries of these divisions are unimportant, no net fishing being allowed. The total value of the fisheries is given at only $4,651.

LAKE NIPISSING DIVISION.

Overseer J. S. Richardson, who has charge of the whole of this division returns an increased catch. This beautiful lake is well stocked with fish, chiefly pickerel, pike, sturgeon, herring, and whitefish. There is as yet very little fishing done in summer; it being too far from markets to ship fresh, and as this vast sheet of water is shallow, it might be judicious not to permit net fishing till September. Most of the fishing is done through the ice. Tourists from all parts of Canada and the United States are increasing every year; and there is no doubt but Lake Nipissing will soon become a favorable resort for shooting and fishing. The whole yield of the fisheries is valued at $6,373.

PARRY SOUND AND MUSKOKA DIVISION.

Overseer G. R. Steele, of Lorimer Lake, who has charge of the inland waters of Parry Sound, visited all the saw-mills of his division, and, with the exception of one party who was fined and cautioned with a much heavier penalty should the offence be repeated, he found mill-owners well disposed to carry out the law. Alleged complaints of illegal fishing, upon investigation, proved groundless. Settlers are complaining of not being allowed to use herring nets to fish for their own use.

Overseer Wm. Lockhart, of Denville, who has charge of the inland waters of several townships in Muskoka and Parry Sound, reports the close season as having been fairly observed. Spearing may be still going on in certain localities, but it is difficult to check it, as it takes place at night.

WELLINGTON COUNTY INCLUDING RIVER CREDIT.

Overseers Andrew Hughson of Orangeville, and *W. Hull* of Erin, who have charge of the River Credit, return about the same catch as last year. They claim that speckled trout spawn three weeks earlier than the beginning of the close-season, and a change is advocated to suit those waters. *Mr. Hughson* brought some poachers before the magistrates, but failed to convict, although certain of their guilt. Saw-mills and tanneries in this district do not throw their refuse in the streams.

LAKE SCUGOG DIVISION.

See *Overseer G. B. McDermot's* report, page 214.

LAKES SIMCOE AND COUCHICHING DIVISION.

Overseer Wm. Hastings, who has charge of the south shore of Lake Simcoe states that the great depth of snow last winter, caused such a rise of the water, that little fishing could be carried on. Some fishing was attempted during close season, and over a thousand yards of nets were confiscated and destroyed.

Overseer L. S. Sanders, who has charge of the west shore of Lake Simcoe, states it is impossible for him to give an accurate idea of the quantity of fish caught by angling, trolling and spearing. Poachers were determined to violate the law, and although not successful in every case, the overseer succeeded in having several fines imposed. Some people contended that all the fish caught could not possibly be taken with lines, and that nets must be used. In order to satisfy himself on this point, Overseer Sanders examined three or four night lines and took about three dozen whitefish in them. These lines of from 100 to 500 yards long, have hooks attached at every fifteen inches apart. They are baited with fat pork, minnows, beef, worms &c., and are mostly used by poor people—they take quite a lot of fish.

Overseer Wm. McDermot attends to the inland waters of the county of Simcoe. Mill owners seem to better understand the law respecting sawdust, and are better disposed to comply with its requirements; there were, however, three convictions against mill owners. Illegal fishing with nets or spears has almost ceased, though this officer suspects certain poachers on Holland River, but was unable to catch them. The fishways in this divssion are all in good working order. Mr. McDermot reports bass getting more plentiful on Holland River. Speckled trout are also on the increase near the head waters of Mead River.

Overseer F. Webber attends to Lake Couchiching and the Severn River. He reports a marked improvement in maskinongé which appear to be coming back. Some four thousand pounds were captured with trolls; a few weighing as high as 47 pounds. Whitefish are increasing. Black bass and pickerel gave excellent fishing and the yield exceeds that of last year. Some mill-owners are still careless about the disposal of their rubbish. Mr. Webber visited all the mills complained of, and thinks that no more will be heard from them. The resident Indians, though somewhat improved, still give trouble. The latitude allowed them in regard to game leads them to expect similar concessions in regard to fish. Some of them are, however, well disposed towards our laws; two nets taken up by them were brought to the overseer. As usual Severn River was frequented by a large number of American anglers; a single party from Pittsburg, Pa., numbering over one hundred, had excellent sport. Five persons were convicted of spearing and one of offering for sale illegally caught fish.

VICTORIA COUNTY DIVISION.

Overseer J. R. Graham has to look after some twenty lakes in the above named county, north of Sturgeon Lake. He reports that maskinongé and bass are the princi-

pal kinds of fish, and that they show no sign of decrease. Unknown parties used explosives in Balsam Lake, destroying large numbers of fish. So far he has been unable to find out the guilty parties. Some persons were brought before the magistrate, but he failed to convict. The value of the fisheries of this division is given at $3,475.

PETERBORO' COUNTY DIVISION.

Overseers Geo. Cochrane of Lakefield, *J. Dancey* of Minden, and *B. H. Sweet* of Bancroft, have charge of this division. The principal fish are bass and maskinongé. Speckled trout are abundant in some lakes, attracting quite a number of sportsmen. The total value of the fisheries of this division is put down at $11,240.

RETURN of the Number and Value of Vessels, Boats and Fishing Materials, the Province of **Ontario,**

NAMES OF STATIONS.	VESSELS AND BOATS EMPLOYED.							FISHING			
	Vessels or Tugs.				Boats.			Gill Nets.		Seines.	
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	Fathoms.	Value.
Lake Superior Division.			$			$			$		$
Thunder Bay					3	200	6	10000	600		
Welcome Islands					5	375	10	15500	930		
Point Porphyry					4	350	8	12000	720		
Black Bay	2	80	1800	6	2	190	4	6000	360		
Roche Debout					4	350	8	12000	720		
Nepigon Bay	1	45	850	3	9	900	18	27000	1600		
Jackfish Bay					4	600	9	1800	1800		
Caribou Island					2	200	4	9000	600		
Lizard Island	2	98	8000	10	16	3200	52	58500	5760		
Mica Bay					2	300	4	7500	750		
North Mamainse					3	400	5	12600	1025		
Pancake Bay					1	45	2				
Totals	5	223	10650	19	55	9110	130	171300	14865		
Manitoulin Islands.											
Macbeth Bay					2	350	3	250	200		
Grand Sable					2	400	4				
Grand Batture	2	40	7000	12	2	400	3	2500	800		
Spanish Bay					4	800	10				
South Bay	2	52	2500	10	10	1000	40	35800	7000	70	375
Club Island	1	10	800	5	6	600	18	14000	2000		
Squaw Islands	5	125	11000	25	45	4500	135	100500	18700	60	300
Manitowaning											
Little Current											
Kagawong					6	600	20	15000	1800		
Gore Bay											
Duck Islands	4	75	14000	20	20	5000	50	100000	12000		
Cape Robert	2	30	7000	12	3	600	12	3000	3000		
Rattlesnake Island					1	200	4				
St. Joseph's Island					4	800	10				
Manitoulin Island (north side)	2	80	6000	6	5	1000	15				
Totals	18	412	48300	90	100	16250	324	271050	45500	130	675

Number of Men Employed, &c., with the Kinds and Quantities of Fish, in the for the Year 1889.

Materials.		Kinds of Fish.											Value.
Pound Nets.													
No.	Value.	Whitefish, brls.	Whitefish, lbs.	Trout, lbs.	Trout, brls.	Herring, fresh, lbs.	Sturgeon, lbs.	Bass, lbs.	Pickerel, lbs.	Pike, lbs.	Coarse Fish, lbs.	Home Consumption, lbs.	
	$												$ cts.
1	250	45	38000	40000	100	5000	.....	.....	.....	.....	.....	24000	9,460 00
.....	.....	10	80000	40000	20	.....	.....	.....	.....	.....	.....	.....	10,700 00
.....	.....	60	100000	65000	95	.....	.....	.....	.....	.....	.....	.....	16,050 00
8	2400	10	20000	30000	25	.....	70129	.....	117940	.....	40000	.....	17,434 14
2	600	20	175000	120000	100	.....	.....	.....	.....	.....	.....	.....	27,200 00
1	350	40	200000	100000	150	.....	.....	.....	.....	.....	.....	8000	28,140 00
.....	.....	50	30000	50000	150	.....	.....	.....	.....	.....	.....	.....	9,400 00
.....	.....	.....	.....	.....	300	.....	.....	.....	.....	.....	.....	.....	3,000 00
1	700	50	120000	300000	195	.....	1200	.....	.....	.....	.....	.....	42,122 00
.....	.....	25	22500	23500	15	.....	.....	.....	.....	.....	.....	.....	4,550 00
.....	.....	15	20000	18000	20	.....	.....	.....	.....	.....	.....	.....	3,750 00
1	350	.....	25500	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,040 00
14	4650	325	831000	786500	1170	5000	71329	.....	117940	.....	40000	32000	173,846 14
.....	.....	.....	32500	5780	.....	.....	150	.....	.....	.....	.....	.....	3,187 00
2	800	8	33000	2100	.....	.....	916	.....	.....	.....	.....	.....	2,984 96
4	1650	.....	32000	41000	.....	.....	26000	.....	.....	.....	.....	.....	8,220 00
3	1200	.....	8500	4500	.....	.....	16000	.....	4800	.....	.....	.....	4,970 00
2	550	300	779514	.....	500	.....	.....	.....	.....	.....	.....	2000	70,421 12
.....	.....	125	75710	.....	150	.....	.....	.....	.....	.....	.....	25	8,807 55
.....	.....	500	953000	300000	100	.....	2000	1000	50000	2500	.....	10000	115,845 00
.....	.....	100	.....	.....	25	.....	.....	.....	.....	.....	.....	.....	1,250 00
.....	.....	150	.....	.....	50	.....	.....	.....	.....	.....	.....	.....	2,000 00
3	900	200	155265	.....	90	.....	40000	.....	.....	2500	.....	2000	17,906 20
.....	.....	250	50000	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,500 00
8	4000	.....	160000	400000	.....	.....	15000	.....	25000	.....	.....	.....	55,200 00
5	2000	.....	120000	40000	.....	.....	20000	.....	2000	.....	.....	.....	14,920 00
2	800	.....	10000	2000	.....	.....	5000	.....	3000	.....	.....	.....	1,480 00
7	3500	138	53170	22000	15	.....	3000	.....	7200	.....	.....	1500	8,640 60
4	2000	.....	75000	.....	.....	.....	.....	.....	.....	.....	.....	1800	6,054 00
40	17400	1771	2537659	817380	930	.....	128066	1000	135200	5000	.....	17325	328,386 43

RETURN of the Number and Value of Vessels, Boats

NAME OF STATION.	VESSELS AND BOATS EMPLOYED.							FISHING MATERIALS.							
	Vessels.				Boats.			Gill Nets.		Seines.		Pound Nets.		Hoop Nets.	
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	Fathoms.	Value.	No.	Value.	No.	Value.
Georgian Bay Division.			$			$			$		$		$		$
Bustard Islands					14	2100	40	85000	5000	25	75			2	20
Point au Barril					8	1200	22	50000	2560						
Byng Inlet	1	30	2500	4	6	1500	18	60000	4000						
Mink Islands					8	1200	18	50000	3500						
Moose Deer Point					5	750	12	30000	2000					2½	20
Baxter					8	1500	25	30000	1900					6	75
Sturgeon Bay					3	150	6	15000	1000	200	400				
Waubaushene					3	100	6	15000	1000	150	200			1	12
Victoria Harbor					2	50	4	4000	500					6	120
Fesserton					1	50	2	3000	190					12	150
From Victoria Harbor to Allenwood					12	1030	25	13770	3320					5	40
Nottawasaga River					1	150	3			180	30				
Collingwood	2	75	4300	10	5	700	12	6000	900						
Meaford	2	40	3500	8	14	2000	30	8550	1282						
Vail's Point					10	1500	20	2000	300						
Owen Sound	1	15	3000	4	8	1200	16	2500	375						
Colpoy's Bay to Cape Hurd	7	147	24000	26	37	8000	113	223440	55860						
Totals	13	307	37300	52	145	23180	372	598260	83687	555	705			34½	437
Lake Huron Division.															
Fighting Islands					15	2000	45	35000	4000						
Sauble Beach					6	120	24			1200	5000				
Saugeen and River					2	500	6	2000	6000						
Southampton					6	850	17	5900	3200						
Kincardine	1	20	1000	4	5	1000	15	5900	3550						
Inverhuron					2	500	5	2000	1100						
Goderich					3	900	17	6400	1950						
Bayfield					1		2	6525	420						
Grand Bend					5	165	20			640	525				
Blue Point					5	300	5					4	1000		
Stony Point					3	350	5					4	680		
Kettle Point					2	400	5					5	1200		
Ravenswood					2	125	3					2	300		
From Blue Point to Baby's Point					41	1104	128			2038	2828				
Totals	1	20	1000	4	98	8314	297	63725	20220	3878	8353	15	3180		

and Fishing Materials, &c.—Ontario—*Continued.*

Kinds of Fish.													Value.
Whitefish, barrels.	Whitefish, lbs.	Trout, lbs.	Trout, barrels.	Herring, barrels.	Herring, fresh, lbs.	Sturgeon, lbs.	Maskinonge, lbs.	Bass, lbs.	Pickerel, lbs.	Pike, lbs.	Coarse Fish, lbs.	Fish used for Home Consumption, lbs.	$ cts.
100	200000	80000	100	.....	.....	1000	....	5000	100000	.....	.....	6000	32,540 00
50	130000	10000	50	.....	.....	.....	....	15000	30000	.....	.....	10000	15,400 00
50	130000	20000	50	.....	.....	1000	....	40000	60000	.....	10000	10000	20,060 00
30	120000	40000	25	.....	.....	.....	....	5000	10000	.....	10000	4000	15,470 00
20	50000	75000	30	100	.....	1200	500	40000	75000	.....	10000	10000	20,002 00
25	5000	2000	30	75	40000	.....	....	10000	25000	100000	10000	10000	11,150 00
.....	3000	.....	.....	.....	2000	.....	1000	2000	20000	10000	5000	2000	2,430 00
.....	.....	.....	.....	.....	1000	1000	2000	.....	10000	15000	5000	3000	1,820 00
.....	.....	.....	.....	50	10000	.....	....	2000	4000	2000	1000	2000	1,250 00
...	.....	.....	.....	.....	.....	1000	2000	2000	5000	2000	2000	3000	850 00
$62\frac{1}{2}$	188000	122000	138	90	.....	.....	....	.....	32210	1784	13770	61000	33,869 90
15	12000	45000	30	.....	.....	4000	....	.....	600	.....	400	1000	6,228 00
30	60000	200000	40	.....	.....	.....	....	.....	800	.....	300	4000	25,677 00
80	35000	150000	75	.....	.....	.....	....	.....	600	.....	800	2000	19,470 00
.....	2000	200000	100	.....	.....	.....	....	.....	400	.....	500	1000	21,229 00
.....	.....	175000	120	.....	.....	.....	....	.....	300	.....	400	5000	18,880 00
75	1068900	910000	450	120	.....	.....	....	.....	11000	.....	.....	.....	182,902 00
$537\frac{1}{2}$	2003900	2029000	1238	435	53000	9200	5500	121000	384910	130784	69170	134000	429,227 90
600	.....	.....	400	1000	.....	.....	....	.....	.....	.....	.....	.....	14,000 00
.....	.....	.....	.....	500	2500	.....	....	.....	.....	.....	.....	.....	2,125 00
.....	20000	68000	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	8,400 00
.....	50500	120500	.....	.....	.....	.....	....	5000	2000	.....	2000	4500	16,705 00
.....	.....	139000	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	13,900 00
.....	.....	25000	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	2,500 00
.....	.....	82300	20	62	10000	.....	....	1500	5000	300	6000	24100	10,486 00
.....	2800	.....	25	65	.....	.....	....	.....	.....	.....	.....	.....	734 00
8	6800	.....	.....	.....	7000	3400	....	.....	5900	.....	2900	.....	1,619 00
.....	3500	4000	.....	130	30000	38160	....	.....	55655	.....	.....	1500	8,373 90
.....	4519	1467	.....	16	.....	636	....	.....	20265	.....	1500	.....	1,871 28
.....	500	.....	.....	40	20000	10000	....	.....	30000	.....	2000	.....	3,660 00
.....	.....	.....	.....	25	14000	6800	....	.....	5000	.....	.....	.....	1,508 00
.....	.....	.....	.....	876	189600	75155	....	.....	113078	.....	150	2000	24,342 48
608	88619	440267	445	2714	273100	134151	....	6500	236898	300	14550	32100	110,224 66

RETURN of the Number and Value of Vessels, Boats

NAME OF STATION.	VESSELS AND BOATS EMPLOYED.							FISHING MATERIALS.							
	Vessels.				Boats.			Gill Nets.		Seines.		Pound Nets.		Hoop Nets	
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	Fathoms.	Value.	No.	Value.	No.	Value.
			$			$			$		$		$		$
River and Lake St. Clair Division (including Thames River.)															
From Point Edward to Baby's Point	..	....	.....	....	24	482	68	....	....	768	918	....	.....	..	....
Mitchell's Bay	..	....	.....	....	5	273	12	....	....	355	300	....	.....	..	....
Sydenham River	..	....	....	....	3	25	8	....	....	135	60	....	.....	4	50
Thames River	..	....	.....	....	21	194	110	....	....	955	598	....	.....	..	....
Stony Point	..	....	.....	....	10	470	43	....	....	1220	1220	....	.....	..	....
Total	..	....	.....	....	63	1444	241	....	....	3433	3096	..	.....	4	50
Detroit River Division.															
Detroit River, Peach Island and Bois Blanc Island	1	10	1500	40	27	803	87	....	....	28	2665	4	1200	1	20
Lake Erie Division.															
Point Pelée (Island)	..	....	.....	....	27	3430	54	....	....	...	....	28	6450	..	....
do (Mainland)	..	....	...	....	53	4710	61	....	....	.....	...	39	12305	..	....
Romney to Oxford	..	....	.....	....	45	3713	74	1300	100	725	425	48	17800	..	....
New Glasgow	..	....	.....	....	2	170	4	....	....	...	....	4	1000	..	....
Eagle	..	....	...	....	2	150	3	....	....	....	....	3	600	..	....
Tyrconnel	..	....	....	....	8	545	9	....	....	....	....	10	3800	..	....
Port Stanley	2	54	5300	12	12	1380	4	....	....	500	55	10	4500	..	....
Port Bruce	2	16	1900	14	9	725	4	....	....	200	150	13	4100	..	....
Port Burwell	3	34	7500	9	4	375	....	....	....	....	....	9	3200	..	....
Long Point	..	..	.....	....	4	90	14	1750	210	....	....	....	.....	..	....
Houghton to Rainham, including Inner and Outer Bays and Turkey Point	5	34	7500	8	42	2434	127	1597	770	3805	2518	25	9020	..	....
Cayuga to Moulton Bay, including Grand River	3	15	400	6	10	68	24	1545	175	103	355	3	1000	10	60
Low Banks to Fort Erie	..	...	...	....	15	730	38	2200	695	600	450	3	1800	10	100
Total	15	153	22600	49	233	18520	416	8392	1950	5933	3953	195	65575	20	160

and Fishing Materials, &c.—**Ontario**—*Continued.*

Kinds of Fish.														Value.
Whitefish, brls.	Whitefish, lbs.	Trout, lbs.	Trout, brls.	Herring, brls.	Herring, fresh, lbs.	Eels, lbs.	Sturgeon, lbs.	Maskinonge, lbs.	Bass, lbs.	Pickerel, lbs.	Pike, lbs.	Coarse fish, lbs.	Fish used for Home Consumption, lbs.	
														cts
				573	72200		9600			20750			1350	7,763 50
									2650		1900	14600		692 00
							500			5500	1000	18700		971 00
127	23300	54600	176	750	140300		1000	1347	3400	63722	3310	190402	9900	30,711 70
							1500	950	2800	3600	2100	13000	6500	1,221 00
127	23300	54600	176	1323	212500		12600	2297	8850	93572	8310	236702	17750	41,359 20
	81170				177440		31140	900	965	5885	9865	32200	1100	19,191 25
	25220				1117000		34880		64825	29675		42875	2100	66,979 65
	26200				2552922		33340		27765	42150		167103		140,950 49
	56998				1718633	4257	115611	1215	3240	129098	1550	106754	103812	112,091 23
	2000				138070		5819		600	42285		2100	300	10,057 74
	3500				40000		4000			3000		3000	200	2,796 00
	18661				257560		9120		200	52543	398	7000	34326	19,342 34
	43000				310000		40000			185000		3500	118750	36,107 50
	42510	75			152153		23880		15	137257	8	26519	29744	22,373 36
	19736				61600		22851			38458		7300	100	9,759 42
							21675				1469			1,373 95
	61050				402805		76565	400	8085	163469	105557	112289	21772	49,235 07
	3338				48820		9200	200	4186	48342	19070	40800	550	8,617 72
	4000				103000		14800		1050	10400	1000	26000	1500	7,920 00
	306213	75			6902563	4257	411741	1815	109966	901677	129052	545240	313154	487,604 47

RETURN of the Number and Value of Vessels, Boats

NAME OF STATION.	VESSELS AND BOATS EMPLOYED.							FISHING MATE			
	Vessels.				Boats.			Gill Nets.		Seines.	
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	Fathoms.	Value.
Lake Ontario (including Niagara River).			$			$			$		$
Fort Erie					3	70	10			390	380
Queenston					4	90	9			100	90
Niagara					15	1065	38	12500	2250	625	400
Grantham					3	55	6	650	125	25	25
Port Dalhousie to Winona					16	965	35	14750	2640	125	70
Burlington Beach					21	1615	43	16650	3720	1825	840
Bronte to Humber Bay	1	40	2500	4	20	1900	59	36500	5200	200	150
Oshawa to Ashbridge's Bay	1	15	800	3	12	1075	31	34000	4100		
Ashbridge's Bay to Port Union	1	10	250	4	9	975	20	7084	1916	250	210
Brighton to Bowmanville					19	615	51	4000	320	600	535
Rice Lake and tributaries					*						
Trent River											
Totals	3	65	3550	11	122	8425	302	126134	20271	4140	2700
Prince Edward Co. and Bay of Quinte Division.											
Wellington Beach, Weller's Beach, Smith's Bay	3	30	8000	9	40	800	70	40200	3150	1000	350
Bay of Quinte, Ameliasburg, Sophiasburg, Thurlow, Tyendenaga					69	1915	213	1400	300	2800	3005
Totals	3	30	8000	9	109	2715	283	41600	3450	3800	3355

* 200 skiffs and canoes.

and Fishing Materials, &c.—Ontario—*Continued.*

RIALS.		KINDS OF FISH.													VALUE.
Hoop Nets.		Whitefish, brls.	Whitefish, lbs.	Trout, lbs.	Herring, brls.	Herring, Fresh, lbs.	Eels, lbs.	Sturgeon, lbs.	Maskinonge, lbs.	Bass, lbs.	Pickerel, lbs.	Pike, lbs.	Coarse Fish, lbs.		
Number.	Value.														
	$														$ cts.
					4	11500				8000	10600	500	14800		2,176 00
†3	550				110	46424	25	1863		188	1263	1134	1400		3,060 24
			500			234500		44200		15500	11300		10800		16,349 00
1	4					2900						270	1200		194 50
2	10		800	6200		221900		2000		2200		2900	2800		12,260 00
			732	848		363600		180		5340		16650			19,487 06
			825	9000		1050000	450			600		1600	9500		53,894 00
						520000	400					24000	9000		27,494 00
			4000	4000	258	141100	400		1000	1050		6500	34500		10,314 00
19	190		8075	500								19300	74400		3,893 00
									200000	15000					12,900 00
							10000	2000	36000	35000	35000	22000	50000		9,680 00
25	754		14932	20548	372	2591924	11275	50243	237000	82878	58163	94854	208400		171,701 80
40	320		120000	90000	300	50000				4000	8000	30000	68000		26,560 00
102	2530	150	104464		392	110884	230	156	510	6706	32189	31188	248280		28,364 58
142	2850	150	224464	90000	692	160884	230	156	510	10706	40189	61188	316280		54,924 58

† Machines.

RETURN of the Number and Value of Vessels, Boats

NAMES OF STATIONS.	VESSELS AND BOATS EMPLOYED.						
	Vessels.				Boats.		
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.
Lennox, Addington and Frontenac Division.			$			$	
Lake Coast fronting on Lennox and Addington, including Napanee River	....	....	....	....	23	390	31
Amherst Island	....	....	....	....	26	400	34
Inland Waters, County Frontenac	....	....	....	....	.....	.....	.....
Totals	....	....	....	....	49	790	65
Wolfe Island and Kingston Division.							
Pigeon Island	....	....	....	....	2	100	4
Reeds Bay	....	....	....	....	1	40	2
Big Bay	....	....	....	....	2	75	4
South side Wolfe Island	....	....	....	....	1	25	2
Brother's to Howe Island	....	....	....	....	5	200	8
Howe Island	....	....	....	....	6	128	7
Gananoque	....	....	....	....	1	20	1
Totals	....	....	....	....	18	588	28
Rockport, Brockville and Cornwall Division.							
St. Lawrence River, from Rockport to Glengarry Co. Line	....	....	....	....	246	7200	336
Prescott, Russell and Carleton Cos. Division.							
Ottawa River fronting on these Counties and Inland waters	....	....	....	....	25	250	25
Leeds and Lanark Division.							
Charleston Lake	....	....	....	....	4	20	4
Beverly and Rideau Lakes	....	....	....	....	.....	.....	.....
Rideau and Jock Rivers	....	....	....	....	.....	.....	.....
Smith's Falls to Long Reach	....	....	....	....	.....	.....	.....
River Tay and Tributaries	....	....	....	....	1	20	1
Mississippi River and Lake	....	....	....	....	....	.....	....
Totals	....	....	....	....	5	40	5
Renfrew Co. Division.							
Ottawa River, including Bonnechère River	....	....	....	....	24	114	40
Lake Nipissing Division	....	....	....	....	12	385	16
Parry Sound and Muskoka	....	....	....	....	.....	.....	.....
Wellington Co. Division	....	....	....	....	.....	.....	.....
Lake Simcoe	....	....	....	....	....	.....	.....
Lake Scugog Division	1	15	1800	3	200	3000	225
Victoria Co. Division	....	....	....	....	.....	.....	.....
Peterboro' Co. Division	....	....	....	....	59	740	59

and Fishing Materials, &c.—Ontario—*Continued.*

Fishing Materials.				Kinds of Fish.											Value.
Gill Nets.		Hoop Nets.													
Fathoms.	Value.	No.	Value.	Whitefish, lbs.	Trout, lbs.	Herring, barrels.	Herring, Fresh, lbs	Eels, lbs.	Sturgeon, lbs.	Maskinongé, lbs.	Bass, lbs.	Pickerel, lbs.	Pike, lbs.	Coarse Fish, lbs.	
	$		$												$ cts.
3875	548	45	905	27000	.....	.....	.....	3800	.....	.....	.....	59950	11250	52800	8,131 50
7493	410	..	....	150000	10000	1000	.....	.....	4000	.....	7000	45000	5000	.....	20,610 00
.....	.....	..	....	2000	6500	....	4200	.....	....	100	6000	2200	8700	3400	2,055 00
11368	958	45	905	179000	16500	1000	4200	3800	4000	100	13000	107150	24950	56200	30,796 50
880	160	..	....	.....	6000	....	.....	....	750	.....	.....	.....	.....	.....	645 00
260	50	2	25	.....	.....	....	...	....	3500	.....	50	200	200	150	239 50
.....	....	10	150	.....	.....	....	.....	3000	200	.....	.....	700	2000	12800	718 00
350	75	..	....	.....	.....	....	.....	.....	.....	.....	.....	500	100	100	38 00
576	64	23	161	.....	.....	..	.....	2000	.....	.....	.....	.....	6100	19000	995 00
1030	126	7	280	.....	.....	....	.....	800	800	.....	300	150	1850	8025	456 25
276	36	..	....	.....	.....	....	.....	2500	500	1200	3990	.....	52100	11600	3,444 40
3372	511	42	616	.....	6000	....	.....	8300	5750	1200	4340	1550	62350	51675	6,536 15
. ....	....	..	....	.....	.....	....	.....	29400	11100	6875	49840	11350	96100	198000	17,258 90
.....	....	..	....	200	.....	...	.....	2050	5000	9000	6900	12700	9700	76500	4,935 00
.....	....	10	150	.....	10000	....	.....	.....	.....	.....	22000	.....	1800	58600	4,168 00
....	....	..	....	.....	.....	....	.....	.....	.....	...	2000	.....	4000	25000	1,070 00
....	....	..	....	.....	.....	....	.....	3000	.....	5000	4500	6000	5000	14000	1,780 00
.....	....	..	....	...	.....	...	.....	1300	... ..	1200	8000	2650	9200	12000	1,609 00
.....	....	6	120	.....	.....	1000	.....	.....	.....	.....	1600	2000	4000	8300	4,665 00
.....	....	..	....	.....	.....	....	.....	.....	....	.....	4000	....	20000	18000	1,780 00
.....	....	16	270	.....	10000	1000	.....	4300	.....	6200	42100	10650	44000	135900	15,072 00
350	147	..	....	1500	1400	....	....	2270	2020	4350	3725	4140	7550	100800	4,651 80
13350	1130	..	....	4350	.....	..	9600	.....	7526	1126	2650	31370	50614	15150	6,373 52
.....	....	..	....	200	20000	....	1550	.....	.....	500	2500	6000	300	14000	3,068 50
.....	....	..	....	.....	6000	....	37000	60000	.....	.....	3500	.....	2500	45000	7,735 00
.....	....	..	....	.....	23000	....	13500	.....	200	18200	30200	10000	55000	20000	9,949 00
.....	....	..	....	.....	.....	....	.....	.....	.....	200000	80000	.....	.....	100000	19,800 00
... ..	....	..	....	.....	1000	....	4000	1000	.....	15000	25000	5000	.....	6000	3,240 00
.....	...	..	....	2000	22000	....	6000	15000	.....	115500	96000	.....	.....	33000	1,240 00

RECAPITULATION of the Number and Value of Vessels, Boats and Fishing Materials, &c., with the Kinds and Quantities and Value of Fish, in the Province of **Ontario**, for the Year 1889.

NAME OF STATION.	VESSELS AND BOATS EMPLOYED.							FISHING MATERIALS.							
	Vessels or Tugs.				Boats.			Gill Nets.		Seines.		Pound Nets.		Hoop Nets.	
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	Fathoms.	Value.	No.	Value.	No.	Value.
			$			$			$		$		$		$
Lake Superior Division	5	223	10650	19	55	9110	130	171300	14865			14	4650		
Manitoulin do	18	412	48300	90	100	16250	324	271050	45500	130	675	40	17400		
Georgian Bay do	13	307	37300	52	145	23180	372	598260	83687	555	705			34	437
Lake Huron do	1	20	1000	4	98	8314	297	63725	20220	3878	8353	15	3180		
River and Lake St. Clair Division					63	1444	241			3433	3096			4	50
Detroit River Division	1	10	1500	40	27	803	87			28	2665			1	20
Lake Erie do	15	153	22600	49	233	18520	416	8392	1950	5933	3953	195	65575	20	160
Lake Ontario do	3	65	3550	11	122	8425	302	126134	20271	4140	2700			25	754
Prince Edward and Bay of Quinté Division	3	30	8000	9	109	2715	283	41600	3450	3800	3355			142	2850
Lennox, Addington and Frontenac do					49	790	65	11368	958					45	905
Wolfe Island Kingston Division do					18	588	28	3372	511					42	616
Rockport, Brockville and Cornwall do					246	7200	336								
Prescott, Russell and Carleton do					25	250	25								
Leeds, Lanark and Rideau do					5	40	5							16	270
Renfrew County Division					24	114	40	350	147						
Lake Nipissing do					12	385	16	3350	1130						
Parry Sound and Muskoka Division															
Wellington County Division															
Lake Simcoe do															
Lake Scugog do	1	15	1800	3	200	3000	225								
Victoria County do															
Peterboro' County do					59	740	59								
Total	60	1235	134700	277	1590	101868	3251	1298901	192689	21897	25502	264	90805	329	6062

RECAPITULATION of the Number and Value of Vessels, Boats and Fishing Materials, &c.—Province of **Ontario**—*Concluded.*

NAME OF STATION.	KINDS OF FISH.														Value.
	Whitefish, barrels.	Whitefish, lbs.	Trout, lbs.	Trout, barrels.	Herring, barrels.	Herring, fresh, lbs.	Eels, lbs.	Sturgeon, lbs.	Maskinonge, lbs.	Bass, lbs.	Pickerel, lbs.	Pike, lbs.	Coarse Fish, lbs	Fish used for Home Consumption, lbs.	
															$ cts.
Lake Superior Division	325	831000	786500	1170	....	5000	.....	71329	.....	.....	117940	.....	40000	32000	173846 14
Manitoulin do	1771	2537659	817380	930	.....	.....	.....	128066	.....	1000	135200	5000	.....	17325	328386 43
Georgian Bay do	537½	2003900	2029000	1238	435	53000	.....	9200	5500	121000	384910	130784	69170	134000	429227 90
Lake Huron do	608	88619	440267	445	2714	273100	.....	134151	.....	6500	236898	300	14550	32100	110224 66
River and Lake St. Clair Division	127	23300	54600	176	1323	212500	.....	12600	2297	8850	93572	8310	236702	17750	41359 20
Detroit River Division	.....	81170	.....	.....	....	177440	.....	31140	900	965	5885	9865	32200	1100	19191 25
Lake Erie do	.....	306213	75	.....	....	6902563	4257	411741	1815	109966	901677	129052	545240	313154	487604 47
Lake Ontario do	.....	14932	20548	....	372	2591924	11275	50243	237000	82878	58163	94854	208400	.....	171701 80
Prince Edward and Bay of Quinté Division	150	224464	90000	....	692	160884	230	156	510	10706	40189	61188	316280	.....	54924 58
Lennox, Addington and Frontenac do	.....	179000	16500	....	1000	4200	3800	4000	100	13000	107150	24950	56200	.....	30796 50
Wolfe Island and Kingston do	.....	.....	6000	....	....	.....	8300	5750	1200	4340	1550	62350	51675	.....	6536 15
Rockport, Brockville and Cornwall do	.....	.....	.....	....	....	.....	29400	11100	6875	49840	11350	96100	198000	.....	17258 90
Prescott, Russell and Carleton do	.....	200	.....	....	....	.....	2650	5000	9000	6900	12700	9700	76500	.....	4935 00
Leeds, Lanark and Rideau do	.....	.....	10000	....	1000	.....	4300	.....	6200	42100	10650	44000	135900	.....	15072 00
Renfrew County Division	.....	1500	1400	....	....	.....	2270	2020	4350	3725	4140	7550	100800	.....	4651 80
Lake Nipissing do	.....	4350	.....	....	....	9600	.....	7526	1126	2650	31370	50614	15150	.....	6373 52
Parry Sound and Muskoka Division	....	200	20000	....	....	1550	.....	.....	500	2500	6000	300	14000	.....	3068 50
Wellington County Division	.....	.....	6000	....	....	37000	60000	.....	.....	3500	.....	2500	45000	.....	7735 00
Lake Simcoe do	.....	.....	23000	....	....	13500	.....	2000	18200	30200	10000	55000	20000	.....	9949 00
Lake Scugog do	.....	.....	.....	....	....	.....	.....	.....	200000	80000	.....	.....	100000	.....	19800 00
Victoria County do	.....	.....	1000	....	....	4000	1000	.....	15000	25000	5000	.....	6000	.....	3240 00
Peterboro' County do	.....	2000	22000	....	....	6000	15000	.....	115500	96000	.....	.....	33000	.....	17240 00
Total	3518½	6298507	4344270	3959	7536	10452261	141882	886022	626073	701620	2174344	792417	2314767	547429	1963122 80

RECAPITULATION

Of the Yield and Value of the Fisheries in the Province of **Ontario**, during the Year 1889.

Kinds of Fish.		Quantity.	Price.	Value.
			$ cts.	$ cts.
Whitefish	Brls.	3,518½	10 00	35,185 00
do	Lbs.	6,298,507	0 08	503,880 56
Trout	"	4,344,270	0 10	434,427 00
do	Brls.	3,959	10 00	39,590 00
Herring	"	7,536	4 00	30,144 00
do	Lbs.	10,452,261	0 05	522,613 05
Eels	"	141,882	0 06	8,512 92
Sturgeon	"	886,022	0 06	53,161 32
Maskinongé	"	626,073	0 06	37,564 38
Bass	"	701,620	0 06	42,097 20
Pickerel	"	2,174,344	0 06	130,460 64
Pike	"	792,417	0 05	39,620 85
Coarse fish	"	2,314,767	0 03	69,443 01
Home Consumption	"	547,429	0 03	16,422 87
Total for 1889				1,963,122 80
do 1888				1,839,869 09
Increase				123,253 79

STATEMENT showing the Number and Value of Vessels and Boats and Fishing Material used in Ontario during the Year 1889.

——	Value.
	$
60 vessels or tugs (tonnage 1,235)	134,700
1,590 boats	101,868
1,298,901 fathoms of nets	192,689
21,897 do seines	25,502
264 pound nets	90,805
329 hoop nets	6,062
3,528 men employed.	
	551,626

APPENDIX No. 8.

MANITOBA AND NORTH-WEST TERRITORIES.

ANNUAL REPORT ON THE FISHERIES OF MANITOBA AND NORTH-WEST TERRITORIES, FOR THE YEAR 1889, BY Mr. ALEXANDER McQUEEN, INSPECTOR.

WINNIPEG, 31st December, 1889.

Hon. CHARLES H. TUPPER,
Minister of Marine and Fisheries, Ottawa.

SIR,—I have the honor to submit my Sixth Annual Report on the Fisheries of Manitoba and the North-West Territories for the year ending 31st December, 1889. Accompanying this report will be found the usual summary of statistics, together with the reports of overseers and guardians, from the different districts that have been brought under the operation of the Fishery Act. I might, at the outset, refer to the fact that the vast extent of territory, and the difficulty and expense of travelling, preclude my giving even a general idea of the fishery resources of the great North-West. Enough is known, however, through explorers, missionaries and pioneer settlers to make it safe in saying that probably there is no portion of the continent so well watered with lakes and rivers, and reputed to be supplied with an abundance of good food fish, of which whitefish, pickerel and sturgeon are staple varieties. I will, however, have to confine myself to what has come under my immediate supervision in the settled portions of Manitoba and the adjoining District of Assiniboia. The overseers report good fishing, on the whole, this year; but the catch was not quite so great, the large firms not having gone so extensively into it as in the previous summer. The traders who have a fishing fleet and other plant on Lake Winnipeg find the seasons short compared with those on the great lakes in Ontario. They cannot get out before the 10th of June, when the ice breaks up on the lake, and they have to stop on the 4th of October, upon the advent of the close season, giving them less than four months in which to conduct operations. Perhaps, in view of the outcry about depletion and Indian starvation, it is not an unmixed evil to have a short fishing season and stringent fishery regulations.

There is to my mind a great deal of unnecessary alarm in regard to the depletion of whitefish in our waters. I am not insensible to the necessity for a rigid protection of our fisheries; and to this end I am still as strongly as ever impressed with the necessity of having at least two hatcheries established in this country, to stimulate the culture and propagation of not only whitefish, but of such other varieties as may be made indigenous to our inland waters. I would, however, remark that, the fishing industry of our great lakes is as yet but in its infancy. I have taken the trouble, a you will see further on, to have an engineer give me some idea of the area and extent of some of our lakes, and when these are contrasted with similar bodies of water elsewhere, the absurdity of the outcry of an absolute depletion of fish, will be evident to any impartial observer. There are only three firms at work in Lake Winnipeg during the summer months, and their aggregate catch does not compare with that of fishermen on Lakes Erie, Huron and Ontario. Only about one-third of the water area of Lake Winnipeg has as yet been tested at all. The Indians still continue to fish during the spawning season, claiming their right to do so under treaty, but with the stringent enforcement of the regulations, there is no occasion

for hindering the development of the fishing industry, or depriving Icelanders, half-breeds and even Indians, of what has become to them a tangible means of support throughout the year. Those who have been agitating for a suppression of the fish trade, have tried to convey the idea that the southern end of Lake Winnipeg was so much depleted of whitefish that traders have been forced to operate in other sections of the lake. This statement is not in accordance with the facts, for this end of the lake was never very largely fished by traders, it being for the most part a resort for winter fishing by smaller fishermen, who still fish there every winter with very fair success. Messrs. Reid & Clark, who were the first traders to operate on Lake Winnipeg, on a large scale, first set their nets in the summer of 1881, ten miles from the mouth of Red River, but caught no whitefish there. They then tried the vicinity of Elk Island, 20 miles further north, with no better results. They next operated at Big Island, 80 miles from the mouth of Red River, where they caught only four tons of whitefish during the summer of 1881. The winter following they secured ten tons of whitefish, mostly purchased from Icelandic settlers. In the summer of 1882 they had fair success again at Big Island, until the middle of July, but they were compelled to transfer their operations to Little Saskatchewan River, as they could not have covered expenses had they remained at the south end of the lake. The large traders, on this account, never operated in any succeeding summer at this end of the lake, but established themselves at Berens Island, twelve miles south of Berens River, and at Little Saskatchewan River, where they have operated every summer since, with fair success. The firm of Robinson & Co., who have had a transportation line of steamers to Grand Rapids for a number of years, built freezers and ice houses at this point, where they have carried on fishing operations for a short time each summer, during the last two years. It will thus be seen that the fishing operations on Lake Winnipeg are not, after all, carried on upon so large a scale as those promoting the agitation would endeavor to convey.

THE FISHING INDUSTRY.

The trade during the past year was fairly successful, and has been the means of giving considerable employment to a class of people, who, without it, would have been subjected to much privation and hardship. Fully two thousand people, directly and indirectly, have found this industry a means of assisting them to earn a livelihood. There were five tugs and three barges, of 955 tons burthen, engaged in the trade during the season, on Lake Winnipeg valued at $38,000; twenty-four clinker-built boats, valued at $6,200; and 31,167 fathoms of gill net, valued at $4,474, used by the principal firms engaged in this business. There were besides 510 other boats used by other fishermen, who operated 21,833 fathoms of gill net, valued at $3,926; 175 gill nets, five seines and three pound net licenses were issued during the year, realizing $792; fines, $29; total, $821. The tugs and barges were used exclusively on Lake Winnipeg. The pound nets (8½ inch mesh in the crib) were used at Pigeon Bay and Grand Marais Point.

Subjoined is a summary of the catch for the year, as compared with that of the previous year:—

	Lbs.	Value.
1888	4,648,250	$180,677
1889	4,359,927	167,679

The Indian consumption is a somewhat difficult thing to get at, but a careful estimate by the overseers places it at 1,500,000 lbs., valued at $58,000. This will make the aggregate catch for the year, 5,859,927 lbs., and valued at $225,679. Apart from the fishing itself, other industries have sprung up with the trade. A man named W. J. Guest, manufactured at Reindeer Island and Saskatchewan River, 850 gallons of oil from the fat and refuse of whitefish and other kinds of fish. He sold it in Winnipeg at 40 cents per gallon, and it is used for lubricating machinery. The process of manufacture is simple. The refuse is boiled in sheet-iron vats, and when rendered is strained and put into barrels ready for market. The Indians at

Grand Rapids, Little Saskatchewan River, and Fort Alexander district, manufactured and sold to the trade 200 gallons of the same oil. Messrs. C. W. Gauthier & Co. manufactured 18½ kegs, or 2,260 lbs. of caviare from the roe of sturgeon caught at Pigeon Bay and Grand Marais. It was marketed in New York, realizing, at 60 cents a pound, $1,356. They also manufactured 270 gallons of oil from the fat of their catch of sturgeon.

C. W. GAUTHIER & CO.

Subjoined is a summary of the business done by this firm, during the year, on Lake Winnipeg :—

Catch.	Lbs.	Value.
Whitefish (fresh)	897,500	$44,875
do (salted)	30,000	981
Pickerel	70,000	2,100
Sturgeon	83,000	2,490
Pike	4,555	91
Catfish	600	18
	1,083,335	$50,555

Vessels, boats and men employed :—

Tug "Glendevon," 7 men	$ 8,000
do "Miles," 3 men	6,000
Barge "New Brunswick," 2 men	3,000
13 sail-boats, 39 men	3,900
18,850 fathoms whitefish gill-net	1,939
1,750 do sturgeon do	245
3 pound-nets	600
2 boats for pound-net fishing	200
Freezers, ice-houses, and other buildings	14,000
	$37,884

W. ROBINSON & CO.

The following is a statement of the business of the firm during the year :—

Catch.	Lbs.	Value.
Whitefish (fresh)	610,667	$27,480
do salted	18,600	558
Sturgeon	38	2
Pickerel	53,126	1 594
Pike	4,787	95
Tullibee	1,476	30
	688,694	$29,759

Vessels, boats and men employed :—

	Value.
"Ogema & Lady Ellen," 10 men	$ 9,000
Barge, "North Star," 2 men	2,000
8 sail boats, 16 men	1,400
13,500 fathoms gill net	1,890
10 ice houses and freezers	12,000
	$25,000

SELKIRK FISH CO.

The business of this firm for last season is as follows:—

Catch.	Lbs.	Value
Whitefish (fresh)	91,090	$4,099
do salted	45,000	1,350
Pickerel	3,500	140
Pike	1,400	35
	140,990	$5,624

Vessels, boats and men employed:—

1 tug, 1 barge, 3 sail boats and 7 men $10,900

EXPORT OF FISH.

Through the courtesy of Lieut.-Col. Scott, Collector of Customs at this port, I am enabled to submit the following statement of export of fish to the United States during the year 1889:—

	1888.	1889.
	Lbs.	Lbs.
Whitefish, fresh	1,249,109	1,083,112
do salted	236,600	63,800
Pike	430,204	364,628
Pickerel	142,325	154,779
Tullibee	10,454	58,343
Perch	4,545	3,601
Catfish	525	180
Gold-eyes	.....	500
Sturgeon	2,316	45,830
Suckers	.....	5,793
Sheepshead-bass	.....	900
Salmon trout	29	121
	2,063,107	1,781,587

The above figures show a falling off from last year's. This is accounted for by the fact that there was but little demand and poor prices last winter. Traders therefore held over a large quantity of their fish. The open season in eastern lakes last winter and the abundant supply of fish, overstocked the market, thus affecting the demand for those of Manitoba. The value of fish exported in 1888 is quoted by the Customs authorities at $86,944; this year the value is placed at $85,827. The traders found a market for their fish in New York, Chicago, St. Paul, Minneapolis, Detroit, Buffalo, Helena, Butte City, Fargo, Grand Forks and other small towns in the neighboring States. A considerable quantity of fish was shipped east to Windsor, Toronto and Montreal. The balance remained in Manitoba.

LAKE OF THE WOODS.

In accordance with instructions received last year, I have refused to issue licenses for net-fishing in the Lake of the Woods District during the past season. This proved a disappointment to one or two traders who had made preparations during the previous summer to operate in our waters. Mr. D. F. Reid, one of the principal men applying for fishing privileges, concluded to operate in Buffalo Bay, on the American side. In addition to dealing with American fishermen, he purchased fish from Canadian Indians. Mr. Reid stored his fish at Rat Portage, from which point he shipped to American markets.

The following is a statement of his business during the past year:—

Sturgeon,	46 tons,	caught in Buffalo Bay.	
Pickerel,	12 do	purchased from Indians.	
Whitefish,	29 do	do	do
Trout,	1 do	do	do

Messrs. Bostedt & H. P. Asmass, from Michigan, manufactured and exported, *viâ* the Canadian Pacific Railway to New York, 230 lbs. of sounds and 4,900 lbs. of caviare.

FISH-WAYS.

The question of obstructions to the ascent of fish up the rivers, is sometimes a source of annoyance to people residing in the vicinity of some of our small streams. Complaints are sometimes made against railway corporations and mill-owners, who have placed dams across streams, that they do not provide the necessary fish-ways. The chief accusation during the year was against the Manitoba and North-Western Railway Company for their dam at Westbourne. I visited the locality several times, and the railway authorities evinced a strong desire not only to comply with the law, but to meet the wishes of the people. Although the dam was provided, after its reconstruction last year, with a proper fish-way, yet it was claimed that the fish did not get up in sufficient quantity, so, after visiting the place again, the railway authorities put in an additional fish-way which, I believe, will fully meet the requirements next spring. Another difficulty presented itself at Birtle, where, owing to a freshet, the dam on Bird Tail Creek was carried away. The owners, when rebuilding the dam, neglected putting in a fish-way. When I learned of this fact I notified the manager in charge to have a legal fish-way put in. This was done in November last. In a number of places weirs were put across streams to intercept the passage of fish. Indians were found to be the principal transgressors in this respect. Two cases near the mouth of Little Saskatchewan River gave some considerable annoyance for a time. Mr. Clay, of Rapid City, acting upon my instructions, destroyed the weirs. I would suggest that the Indian agents be asked to advise the Indians to stop this practice, otherwise I will be compelled to prosecute them if they continue it another year.

THE CLOSE SEASONS.

The close season for whitefish, according to the existing regulations, extends from the 5th of October to the 10th November. All persons who have experience in our waters, are agreed that those dates cover the vital period for the spawning of whitefish, particularly in Lake Winnipeg. Some, however, maintain that the date is later in portions of Lakes Manitoba and Winnipegoosis. Overseer Gilchrist, in his report for Assiniboia, also claims that the date for the Qu'Appelle and Long Lakes should be fixed not only later, but for a longer period. It is difficult, in view of such discrepancies, to adopt a uniform regulation for the close season. I am, however, strongly impressed in favor of the spawning season beginning not later than the 5th of October, as at present,; but, if a change is to be made at all, I would recommend an extension of time, say from the 10th to the 30th November. Mr. Gilchrist admits that whitefish caught on the 30th of November, were "spent fish." Whitefish commence to seek the shoals in Lakes Winnipeg, Manitoba, and Winnipegoosis early in October; and on this account it would not be in the interest of protection to fix a later date than the 5th October, for the commencement of the close season.

The close seasons for fish during the past year were fairly well observed, and the guardians report but few violations of the regulations. The parties found guilty of an infraction of the law, were arraigned before the magistrates, and fined. The Indians still continue the practice of fishing during the close season, and I would suggest the advisability of asking the Indian authorities to assist in restricting this evil. As the trade increases, other avenues of employment will open up for Indians, and render them less dependent upon this mode of fishing. The wages they could otherwise earn would be sufficient to tide them over winter. Indians can earn fair wages,

and do now receive considerable supplies from the fish traders and lumbermen, who employ them in their camps and mills at all seasons of the year.

FISH-CULTURE.

This question is now becoming a live topic amongst those who take an interest in fishery matters. The agitation which has been going on for years, in fact ever since the inception of the trade, may do some good, if it only hastens the establishment of hatcheries for the propagation and culture of fish in our waters. Experiments have been made, both by myself and private individuals, in the direction of depositing fry, imported from the United States, in a number of small lakes, with what success remains to be seen. Gen. Supt. Baker, of the Manitoba and North-Western Railway, procured 250 black bass from the Minnesota State Hatchery, in October, 1886, and had them deposited in Shoal Lake, near Birtle. He reports that a person caught one of them in July last, weighing one and a-quarter pounds, although when put in the fry did not average more than one ounce in weight. This would indicate that the waters in question are well adapted for the propagation of this species of fish. Through the courtesy of Col. Marshall McDonald, United States' Fishery Commissioner at Washington, I obtained a supply of German carp fry, which were planted, late in the fall, in a mill pond near Rapid City, and Lake Minnewawa, near Glenboro', in Southern Manitoba. Should hatcheries be established next year, the good work thus begun can be carried out on a more extensive scale, and it is to be hoped with fruitful results. I have many enquiries from different sections of the country for German carp and black bass fry, to deposit in the smaller lakes, but for lack of facilities am unable to supply the demand. With a hatchery once in operation this difficulty will be overcome, and the Fishery Department will have the hearty co-operation of the people in the culture and propagation of fish. In many of the neighboring States the question of fish-culture has received the special attention of the fishery authorities, with the result that hatcheries are now rapidly propagating the growth of whitefish, trout, bass, carp and other varieties of food fishes, in American waters. I believe they have set us an example in this respect, well worthy of emulation.

HATCHERIES.

In view of the fact that the Department of Fisheries have now under consideration the subject of establishing two hatcheries in the North-West; one in Manitoba, and the other in Assiniboia, I might be allowed to offer a suggestion as to the location of one of them. I believe the one for Manitoba would best suit the purposes for which it is intended were it located at Winnipeg. It can be constructed more cheaply than elsewhere; and from the fact that there is a system of water-works in operation here, its maintenance would be more economical, not only in avoiding the cost of steam-power, but in securing for the purposes of the hatchery at all times, a good supply of pure filtered water. There is also another reason why it should be located in Winnipeg. The city is the centre of the railway system of the Province and on this account affords every facility for the transport of fry to the different sections of the country.

WATER AREAS OF MANITOBA.

The question of the depletion of fish in Lake Winnipeg and other inland lakes of Manitoba having become a theme of considerable discussion, and a fear being entertained that the supply of food fishes might become exhausted in this country. I caused a civil engineer to prepare an estimate of the extent of the water areas of this Province. I herewith submit his statement, and accompanying map, so that the Department may get a better idea of the extent of water in this country:

"WINNIPEG, 15th November, 1889.

'ALEX. MCQUEEN, Esq.,
"Inspector of Fisheries.

"SIR.—In compliance with your request, I have carefully estimated the area of he waters and lakes of Manitoba and in that part of the District of Saskatchewan ying north of the Province of Manitoba, south of the 54° of north latitude, and west of, and including the northern part of Lake Winnipeg, also that part of the Province of Ontario lying west of a meridian line drawn north from the east of 'Hunter's Island.'

"As a basis for estimating these areas I took the map of the Province of Manitoba and the North-West Territories, published by the Department of the Interior n 1885, and find the total area of the waters within the above limits, as shown on his map, to be 22,017 square miles.

"This, of course, does not include the rivers, nor the great number of lakes known to exist, but which are not shown on any map.

"I am of the opinion that at least fifty per cent. might be added to these figures on this account, which would make the total area 33,025 square mile, and this will probably prove ultimately, when complete surveys have been made, to be less than he actual figures. I attach a schedule showing the detailed areas of the various akes, &c.

"SCHEDULE showing areas of the lakes and waters in Manitoba and adjacent hereto:—

MANITOBA.

	Sq. Miles.
That part of Lake Winnipeg in Province	4,963
do Winnipegoosis do	1,347
do Lake of the Woods in Province	50
Lake Manitoba	1,712
Whitemouth Lake	16
Cross Lake, Lakes Rennie, Falcon, Benton and Agnes	25
Lac du Bonnet and Lake on Winnipeg River	41
Bear Lake, 21; Goose Lake. 35; Leaf Lake, 33; Crow Lake, 39	128
Poplar Lake and Big Fish Lake	25
Pickerel Lake, Heron Lake, Long Lake, &c	75
Island Lake, 28; Trout Lake, 85; Goose Lake, 78	191
Waterhen Lake	87
Pelican Lake, No. 2	29
St. Martin's Lake	125
Otter Lake, 8; Dog Lake, 36; Swan Lake, (No. 1) 9	53
Shoal Lake	109
Rock Lake and Pelican Lake (No. 2), 25; Swan Lake, 8	33
Oak Lake, 12; Shoal Lake, Clear Lake and other lakes, Riding Mountains, 36	48
Lake Dauphin, 387; Ebb and Flow Lake, 43	430
Swan Lake and Pelican Lake (No. 3)	123
Deer Lake, 44; Eagle Lake, 29; Deer Lake (No. 2), 54; Bad Lake, 18	145
Red Lake, 257; Albina Lake, 41; Swan Lake, 43	341
Shoe Lake, 35; Gull Lake and Pugwash, &c	87
Cat Lake, 257; Lakes on Cat Lake River, 37	294
Family Lake, 262; Whitewater Lake, 35	297
That part of lakes on English River, in Manitoba	49
do Lac Seul, in Manitoba	445
do Lake St. Joseph, in Manitoba	231
Other small lakes, for the most part not named	1,593
Total water area in Manitoba	13,129

"Water areas of that part of the North-West Territories lying north of Manitoba and south of the 54° of north latitude and west of and including Lake Winnipeg:—

	Sq. miles.
Part of Lake Winnipeg	4,588
do Winnipegoosis	774
do Big and Little Playgreen Lakes	164
William Lake, 46; Moose Lake, 211	257
Indian Bear Island Lake	117
Cross Lake, 42; Red Deer Lake, 39	81
Cedar Lake, 246; Buffalo Lake, 11	257
Small lakes not named	115
Total	6,353

Water areas in that part of Ontario lying west of a meridian drawn north from the east end of Hunter's Island:—

	Sq. miles.
That part of Lake of the Woods in Ontario	876
do Rainy Lake in Ontario	298
do Lac Seul do	568
do lakes in English River in Ontario	58
Area of other lakes shown on map	735
Total area	2,535
Grand Total	22,017

Note.

Total area of Lake Winnipeg	9,551
do Winnipegosis	2,011
do of the Woods	1,015
do Rainy Lake	638

I have the honor to be, Sir,
Your obedient servant,
D. CODD, *C. E.*

REPORTS OF GUARDIANS.

The work of the fishery guardians has on the whole been satisfactory. There are no postal facilities to many points on Lake Manitoba and Lake Winnipeg; and it is therefore exceedingly difficulty for them to communicate with the inspector as freely and often as desirable, even in summer; and it is worse in winter. Guardians Johnson and Archer, the former at Berens River, and the latter at Lake St. Martins, find it difficult on this account to send in their returns in time for my annual report, except they making a special trip, or when they happen to catch a person coming to Winnipeg, which is not always possible in the early part of January. The result is that, every year, at this time, I am delayed in my report, on account of not hearing from two or three of the most important districts, under my supervision. In view of this difficulty, I would recommand the alteration of the fishery year, so as to correspond with that of the fiscal year, and that of some of the other Departments. By doing this ample time would be given for the preparation of a more exhaustive report, than it is possible to do, in a hurry, after the close of the calendar year, and so near the date of the meeting of Parliament. The facilities for travelling are also better in summer than in winter, and guardians have more leisure, too, at that time, than in winter. These officers have been vigilant in the matter of enforcing the close season and the fishery regulations generally; and with the experience gained, I

MAP OF PARTS OF
MANITOBA, SASKATCHEWAN,
AND KEEWATIN.
Showing the principal Lakes and Rivers.
SCALE OF MILES.
0 10 20 30 40 50 60 70 80 90 100
North Boundary of Manitoba.
LAKE WINNIPEG
LAKE MANITOBA
LAKE WINNIPEGOSIS
LAKE DAUPHIN
Duck Mts.
Riding Mts.
Porcupine Mts.
Pasquia Hills
Swan R.
Woody R.
Pelican R.
Pelican L.
Dawson Bay
Deep Rock R.
Red R.
Devils Pt.
Gilbert R.
Heron L.
Dancing Pt.
Two R.
Sandy R.
Mossy Pt.
Berens I.
Berens R.
Pigeon R.
Goose L.
Middle I.
Leaf R.
Pelican R.
Big Black R.
Little Black R.
Pike R.
Pike I.
Old Wives L.
Windy L.
Big Reed L.
Grass L.
Nelsons L.
Little Playgreen L.
Gt. Playgreen L.
Playgreen Pt.
Mossy Pt.
Eagle Pt.
Selkirk I.
William L.
Moose L.
Summerberry Cr.
Saskatchewan R.
Moose L. R.
Buffalo Ly R.
CEDAR L.
Mossy Portage
Grand Rapids
Fleming R.
Spruce L.
Channel L.
Grevett
Deer R.
Long Pt.
Gull Pt.
George I.
Big Stone R.
Poplar Pt.
Poplar R.
Gull R.
Leaf R.
Goose I.
Mossy Pt.
Dancing Pt.
Sandy R.
Two R.
Heron L.
Pelican L.
Pelican R.
Swan Pt.
Swan R.
Woody R.
Dog I.
Birch I.
Duck R.
Duck Pt.
Pine R.
Deer Point
Meadow Portage
Waterhen R.
Waterhen L.
Pelican R.
Pelican L.
St. Martins Pts.
Limestone Pt.
Limestone R.
Lynx I.
Cat Pt.
Stony Pt.
Portage
Warpath R.
Little Saskatchewan R.
Pelican L.
Pelican R.
Pigeon R.
Catfish R.
Split Rock Cr.
Beaver R.
Beaver Pt.
Black Bear I.
Blood R.
The Narrows
Loon Cr.
Buffalo Hd.
Askandaga R.
Swan-neck Cr.
Beaver I.
Black I.
Hole R.
Bad R.
Mossy R.
Black R.
Bear L.
Bear R.
Molasse Pt.
Pt. Alexander
Pt. Bas
Red L.
Pt. du Bois
Willow Pt.
Devils I.
Deer Horn R.
Broken Head R.
Boggy Creek
Red River
Whitemud R.
Portage la Prairie
St. Francis
Marshy Pt.
Sandy R.
Lilly L.
Long L.
Duck I.
Swan L.
Otter Ls.
Mary L.
Clear L.
Long L.
Otter L.
Dog L.
Otter L.
Fisher R.
Fisher Bay
Steep Rock Pt.
Crane R.
Big Island
Big I.
Big Island Ls.
Narrows
Gypsum Pt.
Gypsum Bay
Gypsum Pt.
Limestone Bay
Eagle I.
Selkirk I.
Moose L.
Summerberry Cr.
Saskatchewan R.
Moose L. R.
Buffalo Ly R.
Swan R.
Woody R.
Riding R.
Duck R.
Pine R.
Deer Point
Meadow Portage
Waterhen R.
Waterhen L.
Pelican R.
Pelican L.
Dancing Pt.
Two R.
Sandy R.
Heron L.
Pelican L.
Swan Pt.
Dog I.
Birch I.
Duck R.
Duck Pt.
Pine R.
Woody R.
Swan R.
Riding R.
Deer R.
Dawson Bay
Deep Rock R.
Red R.
Devils Pt.
Gilbert R.
Spruce L.
Channel L.
Grevett
Fleming R.
Mossy Portage
Grand Rapids
Saskatchewan R.
Moose L. R.
Buffalo Ly R.
CEDAR L.
Selkirk I.
Eagle I.
Limestone Bay
Limestone R.
Gypsum Pt.
Gypsum Bay
Steep Rock Pt.
Crane R.
Big Island
Big I.
Big Island Ls.
Narrows
Fisher Bay
Fisher R.
Otter L.
Dog L.
Otter Ls.
Mary L.
Clear L.
Long L.
Otter L.
Duck I.
Swan L.
Lilly L.
Long L.
Marshy Pt.
Sandy R.
St. Francis
Marshy L.
Whitemud R.
Portage la Prairie
Portage la Prairie
St. Francis Xavier
Red River
Boggy Creek
Broken Head R.
Deer Horn R.
Devils I.
Netley L.
Netley Cr.
Willow Pt.
Bear R.
Bear L.
Pt. du Bois
Pt. Bas
Red L.
Molasse Pt.
Pt. Alexander
Mossy R.
Black R.
Bad R.
Hole R.
Pt. Clements
Pt. Mesquakee
Big I.
Queen Narrows
Icelandic R.
Swan-neck Cr.
Beaver I.
Black I.
Buffalo Hd.
Askandaga R.
Loon Cr.
Hamburg B.
Big Grindstone Pt.
Duck I.
Weshow B.
Weshow R.
Fisher R.
Otter L.
Steep Rock Pt.
Crane R.
Big I.
Big Island Ls.
Narrows
Gypsum Pt.
Gypsum Bay
Limestone Bay
Eagle I.
Selkirk I.
Moose L.
Summerberry Cr.
Saskatchewan R.
Moose L. R.
Buffalo Ly R.
CEDAR L.
Mossy Portage
Grand Rapids
Fleming R.
Spruce L.
Channel L.
Grevett
Deer R.
Dawson Bay
Deep Rock R.
Red R.
Devils Pt.
Gilbert R.
Pelican L.
Swan Pt.
Swan R.
Woody R.
Riding R.
Duck R.
Pine R.
Deer Point
Meadow Portage
Waterhen R.
Waterhen L.
Pelican R.
Pelican L.
Dancing Pt.
Two R.
Sandy R.
Heron L.
Dog I.
Birch I.
Duck Pt.
Duck

expect to have the work even better done in the future. I herewith append synopses of their reports for the year ending 31st December, 1889.

ST. LAURENT—LAKE MANITOBA.

Guardian Daniel Devlin who has charge of the fisheries on the south-east shore of Lake Manitoba, in the vicinity of St. Laurent, reports the catch in his district a little less than during the previous year. He visited all the fishing stations from Long Point at the north to the Mission, thence southwesterly to Totogan, and found the close season well observed, except by two persons whom he intends prosecuting for a violation of the regulations.

The quantity of gill nets used amounted to about 7,000 fathoms, valued at $1,400; and 25 boats and skiffs were employed, ranging in value from $10 to $20, and with a carrying capacity varying from 600 to 1,000 pounds. The reason of the decrease in the number of boats from that of last year, is that no fishing was carried on until the lake was frozen, except for home consumption.

Subjoined is a statement of the catch for the trade during the season:—

	Pounds.	Value.
Whitefish	35,780	$1,789
Pickerel	100,000	3,000
Pike	250,000	3,750
Tullibee	8,000	160
Total	393,780	$8,699

This officer estimates the home consumption at 40,000 pounds of whitefish value, $2,000; 20,000 pounds pickerel and pike, value $375; 25,000 pounds mixed fish, value, $375. This makes the total catch of all kinds of fish, 478,780 pounds; of which the aggregate value would be $11,449.

The reason of the diminished catch for the year is ascribed to the early spring. Traders stopped buying two weeks earlier than in previous years, and the fishing season began two weeks later than usual in the autumn.

There were 100 men engaged in fishing in this district. They used 25 boats, valued at $350, and had 7,000 fathoms of gill nets. As most of the nets are supplied by the traders, they report no increase during the year. Twenty-seven licenses were issued. The use of seines was discontinued, the season being found to be too short.

The different kinds of fish caught in Lake Manitoba are as follows:—whitefish, buffalo fish, pike, pickerel, tullibee, gold eye, suckers and catfish. The principal buyers were A. G. Hepworth, John McKenny, Pierre Chaboyer, Fillion & Coy., Hugh Armstrong, N. D. Bradstock, Joseph Hamlin and Smalley & Chantler. The shipping stations for this district, are at Westbourne, on the Manitoba and North-Western Railway, and at Redburn, on the Canadian Pacific Railway.

FORT ALEXANDER, LAKE WINNIPEG.

Guardian John Wood reports fishing somewhat better during the past year, particularly the catch of whitefish. This district extends along the east shore of Lake Winnipeg, from Loon Straits southerly to the mouth of Red River. This officer has resided upwards of thirteen years in the district, and never found it a good place for summer fishing, although there has always been a fair catch in winter. The catch of whitefish is given as follows:—

	Lbs.
Port Alexander	88,000
Grand Marais	3,800
Black River	21,945
Hole River	9,400
Bad Throat River	5,010
Total	128,155

The catch of other varieties was as follows:—

	Lbs.
Pickerel	11,112
Sturgeon	8,900
Tullibee	1,428
Catfish	13,375
Mixed fish	73,943
Total	108,758

This makes a total catch for this district of 236,913 lbs.; 117,058 lbs. of which was used for home consumption. There were 139 men engaged fishing, using 149 boats and canoes, valued at $1,192, with 5,920 fathoms of gill-nets. Of this number 112 were Indians, and the remainder licensed fishermen. Mr. C. W. Gauthier, used one pound-net at Grand Marais for sturgeon fishing. The saw-mill owners of this district paid more attention to the matter of sawdust and refuse, and are endeavoring, as far as possible, to comply with the law.

THE NARROWS, LAKE MANITOBA.

Guardian H. Martineau had charge of the west, east, north and north-east shores of Lake Manitoba, Ebb and Flow Lake, Dog Lake, with creeks and small streams adjacent thereto. The close season was generally well observed, and the Indians did not fish so extensively as usual during the spawning period. They are beginning to understand the advantage of not fishing during that time. This officer reports whitefish the staple catch of his district, and that they are caught in abundance during the months of May, November, December and January; but during the rest of the year their catch does not amount to much. When taken in May the fish are prepared as follows: They are first dried and smoked, then pounded into a mass as fine as powder; this is next mixed with oil made from the offal, and, with smoked fish, forms the principal food supply of both Indians and half-breeds during the summer. Pickerel, pike, tullibee, suckers and perch are also plentiful in these waters; but, strange to say, Indians will not fish for them as long as they can procure whitefish. Oil is not manufactured to any extent, and whitefish are not caught simply for the purpose of making oil from them, as was formerly done. Some oil is, however, yet made from the offal of fish, and answers the purpose of both food and light for the Indians.

One hundred and seventy-five persons fished during the year. Of this number, 155 fished for their own use. There were 6,900 fathoms of gill-nets used, valued at $1,380; one small sloop of about 5 tons, valued at $100; 55 small skiffs, and as many birch-bark canoes, worth from $8 to $50 each, were all the crafts used by fishermen in this district. Mr. Martineau reports the catch as follows:—

	Lbs.	Value.
Whitefish	20,000	$1,000
Pickerel	15,000	450
Pike	30,000	600
	65,000	$2,050

The home consumption, apart from the Indians, is estimated at 250,000 lbs. whitefish, valued at $7,500; 7,000 lbs. of pickerel, value, $140; 30,000 lbs. pike, value, $300; making the total value for home consumption $7,940.

BIG ISLAND, LAKE WINNIPEG.

Guardian John Helgason has a district extending from Hoosavick, near the mouth of Red River, along the west shore of Lake Winnipeg, to Grindstone Point, opposite Loon's Straits. At Hoosavick, fifteen men fished for their own use, during

the months of September and October, there being no whitefish in this locality during the fall of the year. Ten men fished at Gimli, fifteen at Drunken Point, and ten at Sandy Bar. At all these points fishing is carried on to some extent the whole year round. The kinds of fish caught are pickerel, pike, tullibee, gold eye, and a small quantity of coarse fish. This officer reports whitefish as the principal catch in winter. Eighteen men carried on fishing at Big Island the whole year round, only suspending operations during the close seasons. There are quite a number of whitefish spawning grounds, in the vicinity of this Island. At Grindstone Point, the northern limit of this district, seven fishermen fished during the winter; their catch being principally whitefish. Fishing was as good, if not better, than during the previous year at this point, considering the number of men employed, and the small quantity of twine used. Guardian Helgason visited all the fishing stations in October, and found the close season well observed. He complains that Indians still continue to fish during the spawning period, on the shoals contiguous to Big, Black, and Deer Islands, thus greatly injuring the fisheries of the locality.

Subjoined is a statement of the catch of fish in this district: —

	Lbs.	Value
Whitefish	53,020	$2,120
Pike	70,400	704
Catfish	9,050	181
Sturgeon	3,100	124
Gold eye	4,550	45
Pickerel	39,900	798
Tullibee	81,000	810
Mixed fish	117,500	1,175
Home consumption	160,200	1,602
Total	538,220	$7,559

No large boats were used by the fishermen of the district, except that Capt. Bamfield worked a sloop for a short time at Big Island. The appliances, for the most part, consisted of small boats and canoes, and of gill-nets. There were in all 86 boats valued at $1,298, and fished by 94 men; 11,826 gill-nets were used, valued at $1,288.

FAIRFORD, LAKE MANITOBA.

Guardian W. Archer, Lake St. Martin's Narrows, reports the catch in his district considerably below that of last year. This falling off is attributed to two causes, shallowness of the water on the rapids of the Little Saskatchewan River, two miles from the mouth, at Lake Winnipeg, and to the setting of a large number of nets in Sturgeon Bay near the mouth of the same river, which prevented the fish from ascending the river to Lake St Martin. It is suggested that the men who fish at Sturgeon Bay should move their nets further out into the lake. Fishing was also poor this year at Fairford Narrows. The Indians finding fish scarce started early in December to hunt, at which they were very successful; game being plentiful this year. An estimate of the catch of fish in this district is given as follows: —

	Lbs.	Value.
Whitefish	50,000	$1,500
Pickerel	20,000	400
Mixed fish	180,000	1,800
Total	250,000	$3,700

The catch of whitefish last year amounted to 247,500 lbs., but in this was included 40,000 lbs., caught on Lake Winnipegoosis and Water Hen River. At this

latter point 90,000 lbs. of whitefish were caught this year; also 50,000 lbs. of pickerel. This would make the aggregate catch at both places for this year 390,000 lbs., as against 463,000 lbs., during the previous year. Of the 250,000 lbs., caught in the Fairford district, 50,000 lbs. were marketed, and the remainder used for home consumption. All the fishing in the latter district was done by Indians and half-breeds, who used about 7,000 fathoms of gill-nets, valued at $1,400, and 75 boats and canoes worked by 80 men. At Water Hen River, three traders engaged in winter fishing employed 20 men. They used 5,000 fathoms of gill-nets, valued at $1,000.

SHOAL LAKE, STONEWALL.

Guardian J. A. Fraser, reports that fish were not so plentiful here as in previous years. Pike is the only marketable fish in this locality. None were sold from the south end, the catch being barely sufficient for home consumption. The catch for market was principally done at the Narrows, where 60,000 lbs. of pike were sold, realizing $1,200. The total catch for the year is estimated at 75,000 lbs., realizing $1,500. During the month of April, when fish were ascending streams to spawn, he was compelled to stop the practice among settlers of killing them with guns and pitchforks. Twelve men were engaged fishing with 600 fathoms of gill-net, valued at $90.

BERENS RIVER, LAKE WINNIPEG.

Guardian J. B. Johnson, who has charge of this most important district on Lake Winnipeg, reports winter fishing better than in the previous year. The principal stations in this district are at Beren's or Swampy Island, Pigeon Bay, Flat Head, Bull Head, Little Saskatchewan River and Reindeer Island. The close seasons were well observed. Two men were prosecuted and fined for catching sturgeon out of season at Pigeon Bay. The winter fishing began about the 25th November, and the catch for the trade was 149,270 lbs. of whitefish; 29,270 lbs. more than during the previous year. There were also caught 5,700 lbs. of sturgeon, valued at $220. The Indian consumption is estimated at 225,000 lbs. of all kinds of fish. All these fish were caught south of Beren's River. The whitefish caught this winter averaged 4½ lbs. weight. The principal fishermen engaged in the trade were: Raymond and Anderson, Vincent Smith, Charles French and Jesse Matheson. Beside these, fifteen Indians fished in this district.

The summer fishing in this district is nearly all done by the large fishing firms, and the season extends from about the 8th June until the 4th October. The firms operating were those of C. W. Gauthier & Co., Wm. Robinson & Co., and the Selkirk Fish Co. Their total catch amounted to 1,913,039 lbs. of all kinds of fish, valued at $85,938. Of this quantity, 1,692,767 were whitefish, and 77,000 lbs. sturgeon. It may be as well to state here that, this aggregate includes 202,894 lbs. of whitefish caught at Selkirk Island, near Grand Rapids. The above firms employed 5 tugs, valued at $30,000; 3 barges, valued at $8,000; and 24 sail boats, valued at $6,200. They used 37,350 fathoms of gill-nets, valued at $5,479. Besides this, Messrs. C. W. Gauthier & Co. used 2 pound-nets and 2,000 fathoms of sturgeon gill-nets, both valued at $800.

RED RIVER DISTRICT.

The amount of fishing done in this district is somewhat limited; the catch consisting chiefly in coarse fish. Four men fished here during the summer, and sold their catch in Winnipeg. Their names are A. L. Davis, Joseph Samson, Daniel Sewell and Etienne Dupré. They employed 8 men and used 200 fathoms of seines, valued at $150, and 6 boats, worth about $120.

The total catch of this district may be summarized as follows:—

	Lbs.	Value.
Pickerel	50,000	$1,500
Pike	30,000	600
Sturgeon	10,000	500
Mixed fish	175,000	1,750
	265,000	$4,350

Of this quantity 75,000 lbs. were sold to the trade in Winnipeg.

REPORT OF OVERSEER F. C. GILCHRIST.

FORT QU'APPELLE, ASSA., 31st December, 1889.

I beg to submit my annual report for the year ending 31st December, 1889, of the fisheries of the Qu'Appelle River and adjacent lakes. The following is the estimated catch for the past year:—

	Lbs.	Value.
Whitefish	25,000	$1,250
Tullibee	80,800	3,232
Pike	100,000	2,000
Pickerel	10,000	300
Total	215,800	$6,782

The above statement shows a considerable falling off in the catch of whitefish as compared with that of 1888; caused partly by a number of the best fishermen not fishing for the market, and by the smaller catch in some of our lakes whose fisheries are rapidly failing, owing to the ruinous fishing of the Indians during the spawning season. No licenses were issued, and unless the license system is enforced over the whole of Assiniboia, none of the fishermen of my district will fish for market, and consequently no licenses will be taken out.

There were 22 men engaged in the fisheries with 17 boats, value, $200, and 100 nets, value, $400. The Indians have done more fishing this year than usual, especially during the spawning season. Their total catch amounted to 250,000 lbs., made up principally of tullibee, pike and coarser fish.

A great injustice is being done to the Indians by certain officials of the Indian Department in encouraging them to fish during the close seasons, thus helping to destroy in a few years that inestimable boon to any community—fresh fish.

The lakes and rivers of Assiniboia are getting lower every year, owing to the long continued drought. This is, of course, having a very bad effect upon the fisheries.

The present close season, 5th October to 10th November, does not cover the spawning time of whitefish in this district. The tullibee commence to run about 15th October, and this year were not through spawning until 15th November. The whitefish took to the shoals about 1st November, and were in the height of their run about 15th November; and on 23rd November I saw two females and two males from which the ova and milt ran freely, as they were being lifted from the net. After 30th November all the whitefish I saw taken from the nets, with the exception of two females, which were full of spawn, were spent fish. When the fact at last becomes recognized that our lakes are small, that not only are they fished during the summer, but are also subject to a heavy drain all winter, a more rational treatment, and one more suited to the local conditions than the one now in vogue will be adopted. For the district of Assiniboia, I would recommend a close season for whitefish, commencing 15th October and continuing until 31st December, both days inclusive.

REPORT OF OVERSEER O. T. STONE.

CRAVEN P.O., N.W.T., 31st December, 1889.

I have the honour to submit the following report of the fisheries of Long Lake and vicinity for the year ending 31st December, 1889:—

I am pleased to state that throughout the past year there occurred no infractions of the Fishery Regulations worthy of note during the close or open seasons. A larger quantity of whitefish has been taken, as the fishing industry at Long Lake has been carried on to a greater extent than heretofore.

Since the opening of the season for whitefish, viz.: 10th November, there have been engaged in the fishery four outfits of whitemen and twenty families, and about one hundred Indians and Half-breeds. Of these there is but a small percentage of Half-breeds; all of whom, both Indians and Half-breeds, belong to Treaty No. 4. About 140 gill nets (the only nets used) are the most that have been in use at any time, and the aggregate of fish caught for the year may be put down as follows:

Whitefish	16,400
Pike	11,800
Pickerel	500

A considerable number of suckers and Buffalo-fish were also taken; but not being marketable fish, were principally consumed by the Indians.

RECAPITULATION.

Kinds.	Quantity.	Value.
Whitefish, fresh	2,517,282 lbs.	$125,884 10
do salt	93,600 "	4,680 00
Pickerel	449,638 "	13,490 14
Pike	596,147 "	11,922 94
Sturgeon	110,738 "	5,536 90
Tullibee	172,704 "	1,727 04
Catfish	24,025 "	480 50
Mixed fish	395,793 "	3,957 93
Total	4,359,927 lbs.	$167,679 55

The Indian consumption, including Assiniboia, is estimated at 1,500,000 lbs.; valued at $58,000; making the aggregate catch for the year 5,859,927 lbs. for all kinds of fish and a total value of $225,679.55.

I have the honor to be, Sir,
Your obedient servant,

ALEX. McQUEEN,
Inspector of Fisheries.

APPENDIX No. 9.

BRITISH COLUMBIA.

ANNUAL REPORT ON THE FISHERIES OF BRITISH COLUMBIA FOR THE YEAR 1889, BY INSPECTOR THOMAS MOWAT.

New Westminster, B.C., 31st December, 1889.

Hon. Charles H. Tupper,
Minister of Marine and Fisheries, Ottawa.

Sir,—I have the honor to transmit my annual report on the fisheries of this Province for the past year, with statistical returns and condensed reports from the several guardians. These returns show a much larger increase in value than that of any previous year since fishing operations commenced in this Province. The comparative figures show an increase over last season, exclusive of Indian consumption, as follows:—

Total value, 1889	$3,348,067 61
do 1888	1,902,198 50
Increase, 1889	$1,445,869 11

This enormous increase was caused by the unprecedented run of salmon in the Fraser River; a slight increase in the coast pack; a large increase in the catch of skil, and a small increase in the catch of fur seals and sea otter.

The total capital invested, as compared with last season, stands as under:—

1888	$1,036,132 00
1889	1,315,272 00
Increase, 1889	$ 279,140 00

This increase was caused by the addition of eight new canneries, there being four additional on the Fraser River, two on the Naas, and two on the Skeena.

There is also an additional number of new schooners in the fur seal fleet of a larger size, higher class and better equipped than those previously in the trade.

The number of hands employed in the fisheries, as compared with last season, is as follows:—

Season of 1888	5,940
do 1889	7,789
Increase, 1889	1,849

SALMON.

The pack of canned salmon, which is always looked upon as the chief commercial product of the fisheries in this Province, reached the enormous quantity of 20,122,128 1-lb. tins, aggregating alone, at 12 cents per pound, $2,414,655.36, being an increase of 11,288,184 lbs. over the season of 1888. Of this increase, the Fraser River alone contributed 11,112,288 lbs.; but, notwithstanding this enormous increase, I feel satisfied sufficient fish ascended it to pack at least 15,000,000 additional 1-lb. cans, had there been sufficient labor, appliances and material to handle and cure them.

The residents on the Fraser are unanimous in the belief that never before in the history of the river was there such an exceptional run. During the early spring the outlook was not bright, the conditions of the river being against the prospect of a large run. The water was remarkably low, and very clear all through the summer, the light fall of snow in the mountains having melted by the excessive warm weather in the early spring, so that the freshets were well over before fishing commenced. The fish were more plentiful in small streams where we deposited the "fry," and in fair quantities in other streams, where they had been found before being stocked. Therefore, those who had doubts as to the success of the Fraser River hatchery are now loudest in its praise, and seem to think that the annual output of fry will go far to assist nature in keeping up the constantly increasing demand which is likely to be made upon its fish.

The pack of the coast canneries was larger than last season, although there was not so much packed per cannery; River's Inlet being the only place where the run of fish approached anything like the Fraser.

The proportional pack of the canneries on the coast and Fraser River was as follows:—

	1-lb. Cans.
Fraser River, 16 canneries	14,789,856
Coast, 12 canneries	5,332,272
Total	20,122,128

The run in the Skeena and Naas rivers was very high—so much so, that several of the canneries fished with seines on the outside coast and carried the catch to the canneries with small steamers.

A number of the northern packers are now preparing large seines to prosecute the outside fishery more vigorously next season.

I herewith append a table showing the individual pack of each cannery in the Province since canning operations began, including the new canneries erected this season:—

British Columbia Salmon Pack for 14 Years—Cases.

Name of Company.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	Total.
Ewen & Co	3,125	8,334	13,700	8,380	6,191	18,900	20,000	10,438	9,600	23,000	15,000	23,000	10,470	33,700	203,838
Findlay, Durham & Brodie	4,122	11,087	7,885	4,162	5,300	10,200	9,600	4,926	.....	.....	5,300	5,915	3,300	12,410	84,207
Holbrooke & Co	2,600	9,000	12,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	23,600
Finlayson & Lane	.....	11,966	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11,966
English & Co	.....	24,000	17,166	8,813	5,061	18,500	26,000	.....	.....	.....	.....	.....	.....	.....	99,540
British Columbia Packing Co.	.....	.....	12,625	5,200	2,048	19,987	21,500	5,250	.....	12,952	5,000	10,000	5,000	21,056	120,618
Delta Canning Co	.....	.....	16,500	11,500	9,500	19,989	26,700	11,735	.....	21,315	7,506	10,324	6,771	22,150	163,990
King & Co	.....	.....	13,570	5,585	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	19,155
Lane, Pike & Nelson	.....	.....	11,655	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11,655
B. Haigh & Sons	.....	.....	.....	6,850	9,722	21,000	15,401	9,630	.....	.....	.....	.....	.....	.....	62,603
Adair & Co	.....	.....	.....	.....	4,333	17,590	20,478	.....	.....	.....	.....	.....	.....	.....	42,401
Laidlaw & Co	.....	.....	.....	.....	.....	16,350	27,365	11,440	6,650	.....	7,894	10,324	6,771	22,150	108,944
British Union Packing Co	.....	.....	.....	.....	.....	.....	7,560	6,170	.....	.....	.....	.....	.....	.....	13,730
British American Packing Co.	.....	.....	.....	.....	.....	.....	15,000	4,600	.....	12,000	6,000	11,000	10,000	25,000	83,600
Richmond Canning Co	.....	.....	.....	.....	.....	.....	9,600	9,200	4,952	7,850	10,127	10,150	7,804	17,170	76,853
E. A. Wadhams	.....	.....	.....	.....	.....	.....	.....	11,856	.....	.....	14,600	9,850	5,720	18,334	60,360
Wellington Packing Co	.....	.....	.....	.....	.....	.....	.....	10,055	8,780	12,500	11,250	11,500	7,200	20,100	81,385
Phœnix Canning Co	.....	.....	.....	.....	.....	.....	.....	10,401	4,055	.....	10,000	9,000	4,000	20,917	58,373
Spratt's Ark	.....	.....	.....	.....	.....	.....	.....	4,000	4,400	.....	.....	.....	.....	.....	8,400
Bon Accord Fishing Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,500	12,525	5,140	17,771	41,936
Harlock Packing Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,500	4,440	15,480	26,420
Inverness Canning Co	.....	3,000	5,500	5,812	9,924	11,560	12,137	7,480	12,345	6,300	10,587	11,729	13,805	8,125	118,304
Windsor Canning Co	.....	.....	3,000	4,791	9,770	10,000	12,385	7,304	10,546	.....	.....	12,000	12,872	8,772	91,440
Metlakatlah	.....	.....	.....	.....	.....	.....	5,000	6,871	9,772	.....	8,300	.....	.....	.....	29,943
British American Packing Co.	.....	.....	.....	.....	.....	.....	.....	5,200	11,297	.....	12,000	12,965	17,709	12,332	71,503
Skeena River Canning Co	.....	.....	.....	.....	.....	.....	.....	7,000	12,247	6,600	15,000	13,548	15,060	10,100	79,555
Balmoral Packing Co	.....	.....	.....	.....	.....	.....	.....	4,173	7,351	.....	.....	8,350	10,660	9,081	39,615
Alert Bay Canning Co	.....	.....	.....	.....	.....	5,500	4,600	6,400	7,000	6,000	1,200	4,200	5,000	7,162	47,062
H. E. Croasdaile	.....	.....	.....	.....	.....	7,700	9,600	10,983	.....	.....	.....	.....	.....	.....	28,283
Douglas Packing Co	.....	.....	.....	.....	.....	.....	6,500	9,400	.....	.....	.....	.....	.....	.....	15,900
Naas River Fishery	.....	.....	.....	.....	.....	.....	.....	.....	8,500	.....	.....	.....	.....	.....	8,500
A. J. McLellan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12,318	10,200	22,518
Rivers Inlet Canning Co	.....	.....	.....	.....	.....	.....	5,635	10,780	11,887	.....	15,000	7,023	12,000	16,700	79,025
Wannock Packing Co	.....	.....	.....	.....	.....	.....	.....	.....	8,496	.....	.....	4,180	8,000	9,022	29,698
Quashela Packing Co	.....	.....	.....	.....	.....	.....	.....	11,000	3,364	.....	.....	.....	.....	.....	14,364
Sea Island Cannery Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	18,225	18,225
Canoe Pass Canning Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	14,300	14,300
Beaver Canning Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	14,253	14,253
C. G. Hobson & Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15,106	15,105
Cascade Packing Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4,600	4,600
North Pacific Canning Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9,995	9,995
B. C. Canning Co. (Ltd), Naas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5,000	5,000
Total Pack each Year—Cases—(48 1-lb. cans)	9,847	67,387	113,601	61,093	61,849	177,276	255,061	196,292	141,242	108,517	161,264	204,083	184,040	419,211	2,160,763

The decrease in the quantity of fresh and salt salmon was small, and was principally owing to a scarcity of labor and the limitation of licenses on the Fraser.

Reverting to my report of last year on the pack of the Columbia River and the Territory of Alaska, I have to say that the Columbia again shows a decrease of 30,000 cases, the total pack amounting to only 352,000 cases, while that of Alaska amounted to 600,000 cases. The number of canneries increased in Alaska 50 per cent. over 1888. Grave apprehensions are entertained by the Fish Commissioners of the United States, and it will be seen by Livingstone Stone's report that the waters of Alaska will soon be in a more depleted state than even those of California, Oregon or Washington. He states that, "in a small river only 60 yards wide and 30 miles long he saw 10,000 salmon caught with one haul of the seine, and during the day, 150,000 salmon were taken from this same river." His mission to Alaska, at that time, was for the purpose of locating a site for a hatchery, and to report on the feasibility of enacting regulations which would prevent the streams of Alaska being depleted.

HALIBUT.

The trade done by our own people in this fish amounts to comparatively nothing. Nearly all the catch was used for local consumption. According to the American tariff of 1882 a Customs officer would be entitled to add a half cent per pound duty on halibut shipped there on ice. Even if our people were allowed to ship their iced halibut into United States free of duty they would hardly find a market, as the American combines in the fresh fish trade are so interested in the American fishing schooners that they would try to keep our people out.

This state of things will continue as long as our coast remains unguarded and the Americans are allowed to fish with impunity in our waters.

SKIL.

These fish show an increase of 1,076 barrels over last season, the largest quantity being put up by Captain C. A. Lundberg, of Vancouver, who brought a small colony of some fifteen of his relatives and established fishing stations on the west coast of Queen Charlotte Island. These fish were split down the back, the bone taken out, and the head and tail cut off, so that a 200 pounds barrel of fish is as good to a consumer as 300 pounds of herring, mackerel, &c. It only required a small portion of the above pack to supply the local demand, and the enterprising merchants of Vancouver and Victoria are trying to open a market for the balance in Australia, South America, Honolulu, the United States and Eastern Canada, under the name of "Blackerel." Like all other new fish, it is not an easy matter to establish a market for them; but so soon as their excellent quality becomes known to the public it will be a difficult matter to supply the trade. It is not definitely known what proportion of these fish were caught by Americans, in our waters, but it is estimated that the quantity would compare with that of the halibut.

OOLACHANS.

As the delicacy of these fish becomes better known, each year finds an increasing demand, and when the Fraser River fails to supply them they are brought from the Naas, these being the only two streams in this Province where they are found in quantities, especially in the latter, and where hundreds of tons are wasted each season by being caught (principally by American Indians) and allowed to decay on the bank.

This dissatisfies our own natives, and gives them cause for complaint. The practice of destroying these fish ought to be stopped and the Indians who left British Columbia and emigrated to Alaska should be compelled to seek their food supply where they now reside.

SHAD.

To my knowledge none has been taken in the Fraser this season, but a few are occasionally caught in the Gulf, around Race Rocks and at other points. The light-house-keeper on the Fraser Sand Heads reported having collected a number of fish which were strange to him, but looked like large herrings. He was of opinion they were schooling on the flood tide, and were killed by coming in contact with the iron arches of the structure. I did not see the fish, but have no doubt they were shad. It is difficult to say whether there was a run of them in the Fraser this season or not, as the nets used for salmon fishing are of too large a mesh to catch these fish, and salmon are the only kinds fished for.

The Fish Commissioners of Oregon state that they made their appearance in large numbers in the Columbia River, and are now becoming a source of revenue to the State. If our people have the patience to wait a few years they will likely see them also abundant in the Fraser.

SMELTS.

The increase of these fish over last year is considerable, and will continue, so long as the population continues to increase.

The demand for them is better than for most classes of fresh fish, as they can be caught at nearly any season of the year in the salt waters of the Straits.

It will only be a matter of time when the Miramichi fishery will be so reduced that the supply will have to be drawn from this coast.

SARDINES AND ANCHOVIES.

These are consumed fresh, in about the same quantities as in previous seasons; but, to my knowledge, no one has thought of erecting a factory for preserving them. The species of sardines here are very large and of excellent quality.

HERRINGS.

These fish are abundant along the west coast of Vancouver Island and farther north. They are said to be large, and of fine quality for curing. Those sold in the local markets are caught in the bays and harbors of the Gulf, and are small and of poor quality. However, they are abundant, and, were labor cheap, could be manufactured quite as inexpensively as in other places.

STURGEON.

The consumption of this fish has also increaeed in our local markets, largre quantities having been exported than in the previous year. The increase reaches 103,100 lbs., but if there were a regular sturgeon fishery on this river the quantities caught would far exceed that shown by any previous returns from the Province. Numerous enquiries have been made, but to this date no one has attempted fishing exclusively for them.

MARINE FURS.

The returns show an increase in the catch this season of 5,587 fur seal skins, and 25 sea otters. There were 1,922 more seal skins taken on the coast by our vessels than in 1888, and 2,558 more by foreigners, who sold their catches in Victoria.

The following table shows the detailed catch of the sealing fleet for this season:—

RETURN showing the Number of Vessels, Boats and Men engaged in the Marine Fur Fishery of British Columbia, with the Products and Values, for the Season of 1889.

Name of Vessel.	Name of Owner.	Tonnage.	No. of Boats.	No. of Men.	Seals caught on coast of British Columbia.	Seals caught in Behring Sea.	Total No. of Seals.	Value.
								$
Pathfinder	Carne & Munsie	66	6	24	942	48	990	9,900
Viva	do	92	6	22	1,481	2,182	3,663	36,630
Mary Taylor	do	42	11	25	748	.....	748	7,480
Teresa	Babbington & Co	63	7	23	482	828	1,310	13,100
Annie C. Moore	C. Hackett	213	7	23	802	1,318	2,120	21,200
Lily	Morris Moss	70	18	41	500	532	1,032	10,320
Penelope	do	70	6	21	384	1,769	2,180	21,800
Lily	do	68	13	26	280	74	354	3,540
Sapphire	E. B. Marvin	123	25	52	1,364	1,626	2,990	20,900
Aurora	Adolph Wasburg	41	13	38	816	.....	816	8,160
Juanita	Hall & Goepel	40	13	29	135	29	164	1,640
Ariel	E. W. Bucknam	90	6	22	934	1,400	2,334	23,340
Kate	Chas. Spring	58	10	24	624	800	1,424	14,240
Favourite	do	79	10	25	340	1,764	2,104	21,040
Maggie Mack	J. Dodd	70	6	25	777	1,290	2,067	20,670
W. P. Sayword	J. D. Warren	59	12	29	557	1,643	2,200	22,000
Minnie	Victor Jacobsen	46	10	21	200	500	700	7,000
Mountain Chief	do	26	5	13	210	.....	210	2,100
Wanderer	H. Payton	15	6	15	178	.....	178	1,780
Black Diamond	M. Moss	81	12	29	629	55	684	6,840
Beatrice	Wm. Grant	67	7	22	500	700	1,200	12,000
Sierra	.....	10	2	5	80	.....	80	800
Winnifred	.....	10	2	5	22	.....	22	220
		1,499	213	559	12,985	16,585	29,570	295,700
Sea Otter caught by sealing fleet, 15, at $100 each							.....	1,500
Estimate of Seals purchased from Indians							4,000	40,000
do Sea Otter do 100, at $100 each							.....	10,000
do Hair Seals, 7,000							.....	2,625
Grand Total by Canadian Vessels							33,570	349,825

FUR Seals caught by Foreign Vessels and disposed of in Victoria, B.C.

Name of Vessel.		No. of Seals caught on British Columbia coast.	No. of Seals caught in Behring Sea.	Total No. of Seals.	Total value.
					$
Walter L. Rich	American	1,419	.....	1.419	14,190
San Diego	do	69	.....	69	690
T. H. Lewis	do	242	.....	242	2,420
Venture	do	317	.....	317	3,170
Allie S. Alger	do	253	.....	253	2,530
Harry Dinnes	do	18	700	718	7,180
Lottie	do	.....	625	625	6,250
Mollie Adams	do	.....	1,553	1,553	15,530
Bessie Rulter	do	.....	525	525	5,250
Adele	German	240	1,467	1,707	17,070
Total by Foreigners		2,558	4,870	7,428	74,280

It will thus be seen that there are more vessels in the trade than last year. This was on account of an anticipated settlement of the Behring Sea question. The vessels had been previously purchased on the Atlantic coast for the purpose of prosecuting this trade in Behring Sea, but when they reached this coast and found the question was still unsettled they paid more attention to hunting on the coast.

DOGFISH.

These fish appear to show no decline in numbers. They are so plentiful that it will be many years before they are fished out. The quantity of oil extracted from them this year largely increased. I am informed by one of the dealers that the home consumption is increasing at such a rate that the present factories cannot supply the demand. I have had enquiries from some of the sardine packers of Eastport, Maine, asking for samples of fish oil, for the purpose, I presume, of using it in their business.

WHALES.

Our vessels have not yet embarked in this business, and only a chance one is killed by Indians.

TROUT.

The consumption of these fish has increased by 5,525 lbs., although there are not sufficient caught to supply the local demand.

MIXED FISH.

These are made up of the following kinds:—Herrings, rock-cod, whitings, flounders, soles, tom-cod and skates—all of which were consumed in about the same proportion as last year.

SHELL-FISH.

Oysters were consumed in increasing numbers, and as the beds are limited and the variety small the demand is always in excess of the supply.

The beds where these mollusks are now caught are few in number, the principal ones being Chemainus, Sooke and Comox. Guardian Lomas reports that if the modes of fishing, as at present practised, are not changed, the beds will be ruined.

The consumption of clams is on the increase. They are abundant in all parts of the coast, and little fear is entertained of their being over-fished.

Mussels are being used in larger quantities every year, but they are not considered plentiful.

LOBSTERS.

Reports from American papers on the lobsters planted by the United States Fish Commission are favorable. It is stated that a number of young lobsters were found in the Chinese markets of San Francisco during the summer, which are supposed to be the output from those planted in San Francisco Bay.

SHRIMPS AND PRAWNS.

These are found in considerable quantities in the markets, and new fishing grounds have of late been discovered. The United States Fish Commissioners' steamer "Albatros" reported having found excellent ones on the west coast.

PROTECTION.

The fishery regulations passed on the 26th November, 1888, seemed to be unfavorable to the canners, the length of weekly close time, the size of mesh, and the restriction against putting offal in the water being especially objected to; but, as these were modified before the canning season began, most of the canners were fairly satisfied.

The order limiting the number of boats to 450 for the Fraser was at first unpopular, and excitement among a certain class ran high But most of this disturbance was created by men who had never been in the fishing business, backed up by a number of aliens, the majority of whom always worked on wages for canners previous to the limitation. Seeing that the licenses were limited, and that the canneries would have to purchase fish from outside boats, they thought they would have a chance of making a profitable season, and they therefore pressed what they were pleased to call their rights, regardless of any effect that an over-crowding of boats might have upon the river. Many people applied for licenses who never fished before, or, in my opinion, had any intention of doing so; and those who claimed rights were the very men who fished for canners on wages, and never held licenses in their own names. There were a few exceptions to this rule, as the 100 licenses allowed for outsiders did not supply all *bonâ fide* fishermen who had previously held licenses in their own names.

The weekly close time and the other regulations were as well observed on the Fraser as it was possible to do with the staff employed. A few fines were imposed on account of fishing within limits, and one for breaking the weekly close time.

I ordered each licensee to mark his initials and the number of his license in 4½-inch letters and figures upon each side of the bow of his boat, and canners holding licenses for more than one boat were instructed to number them consecutively from No. 1 to the number allotted in their license. By this means the guardians were able to see that there were not an excess of boats fishing under the licenses. There was only one case where an instance of this kind was detected.

The restriction compelling canners to keep the offal from drifting into the water was very difficult to enforce, as the enclosures were constantly breaking away, either from the pressure of the offal, the swell caused by passing steamers, or heavy sea waves rolling in from the Gulf—in each case allowing a portion of it to escape.

The defining of tidal boundaries of estuary fishing, as set apart by the Minister during the past year on the following streams, was much needed, namely: The boundary of Skeena River, being defined at Kitsap Indian village; Naas River, at Finsbury Bay; Fraser River, at Sumas River; Wannuck River, at Victoria Packing Company's wharf; and Cowichan River, at Cowichan wharf. This will prevent salmon being caught and packed in the upper and narrow reaches of these streams.

Mr. A. E. Pittendreigh, fishery guardian at Lulu Landing, reports that the weekly close time was fairly well observed, but owing to the thick fog which prevailed during most of the fishing season it was quite impossible to guard the river properly at all times.

Mr. C. D. Grant, stationed on the upper portion of the Fraser, reported that the regulations were well observed, and that canners and others got all the fish they required.

Mr. J. R. Berkeley, guardian on the Comox River, reports that the regulations were strictly enforced in his district, and that the natives procured sufficient fish for their wants.

Guardian Lewis A. Good, of Nanaimo, sends no report, but I have learned that there is a return of the salmon fry planted there some four years ago.

I have the honor to be, Sir,
Your obedient servant,

THOMAS MOWAT,
Inspector of Fisheries for British Columbia.

REPORTS OF THE DIFFERENT FISHERY GUARDIANS TO THE INSPECTOR OF FISHERIES IN BRITISH COLUMBIA.

SKEENA RIVER.

BY M. K. MORRISON, FISHERY GUARDIAN.

I have the honor to submit the following report as guardian of the Skeena River for the season of 1889:—

I went on duty on the 15th May, which was too late, many people having been fishing before that date. The Indians had their nets ready to put into the water without knowing the size of mesh required by the regulations. It would save a lot of trouble and be a simple justice to the Indians to send an officer among them, while they are making their nets and seines, to inform them of the size of mesh and length of nets and seines as required by the regulations. They cannot read or talk English; some of their villages are not visited by a white man during the year. Consequently, they are unaware that their labor may be of no use until they come to put their nets into the water, as was the case on the day I assumed duty.

About one thousand Indians live by fishing alone in this district; they fish the whole year round. Every month sees a different kind of fish caught, namely:—Candle fish, halibut, codfish, herring, dog-fish, seals and salmon. They complain that the Alaska Indians come over and fish in what they call their waters—that is, British Columbia water—and would like to see this stopped. There were not so many salmon caught at the mouth of the Skeena this year as usual, while at the head of tide water a larger number than usual were caught. Towards the head waters more salmon were caught than for the last eight years. The cause of so few salmon being caught at the mouth of the river is accounted for by the fact that there were no freshe's in the river this year to keep the water dirty enough for drift nets, it being very clear. Towards the end of the fishing season about 40,000 hump-back salmon were caught per day.

During close time, especially Sunday, the guardian should be on the river.

I was compelled to fine some boats and drive others ashore every Sunday.

The Skeena is a good salmon river, and, if properly protected and guarded, would always maintain its present reputation.

The Indians consume about 20,000 salmon each year.

My report of the quantity of salmon already canned you have received.

LOWER FRASER RIVER.

BY C. F. GREEN, FISHERY GUARDIAN.

I have the honor to hand you my annual report on the salmon fishing in this district. I am glad to be able to state that the *Saw-quai* salmon were more numerous in the lower river than I ever saw them before. This increase, I think, it would be only fair to attribute to the benefit of the hatchery. The catches were consequently larger than usual, many of the contract fishermen earning as much as $1,500 in the six weeks of the *Saw-quai* run with a single net and boat. The *Cohoe* run was very poor; they never came into the river in paying quantities, and were of little benefit to the canneries.

During the summer, I forwarded a sample of the fish refuse from the salmon oil factory down here to the Experimental Farm at Ottawa. It was analyzed by Mr. Shutt, chemist, who reported it was worth $34.16 per ton. Since the analysis was made I have had several enquiries after the manure, and I am strongly of opinion that the refuse from canneries could be made to pay if properly handled.

I may state that the new regulations were strictly observed by all the canneries under my supervision.

COWICHAN RIVER.

BY W. H. LOMAS, FISHERY GUARDIAN.

I have the honor to report, for the information of your Department, that, during the past year there has been no seine fishing for salmon in the Cowichan Bay. One gill-net license was taken out, but the owner subsequently decided not to use it. The success of placing *Saw-quai* ova in the Cowichan River has been satisfactorily proved, quite a number being taken by the Indians last fall, and I saw a large number of these fish at the head of the Cowichan Lake in October.

With regard to the taking of oysters in Oyster Harbor, I can give no reliable statistics, no regulation with regard to this fishing having yet been made, and unles this done the supply must rapidly decrease.

The yield of fish oil during the year was somewhat less than usual, Indians and others finding more renumerative employment during the large run of salmon on the Fraser River.

NAAS RIVER,

BY JOHN MCNAB, FISHERY GUARDIAN.

In accordance with your instructions, I left New Westminster on the first day of June for Naas Harbor and River, *viâ* Victoria, and from there to Port Essington, on the Skeena River, per steamer "Sardonax." After having the Department's boat put in good repair for the season's work, and having conferred with Mr. Morrison, the guardian on the Skeena River, I would have proceeded to the Naas in the boat had the weather allowed, but as there was a continuation of strong north and north-west winds I was compelled to remain until the 24th, at which date the mission steamer "Glad Tidings" called at the Skeena on its way to the Naas, and I arranged for a passage, and to have my boat towed to Naas Harbor.

On my arrival I found that operations had already begun at McLennan's cannery, Naas Harbor, that the Cascade Co's. new cannery at Echo Cove was being got ready as speedily as circumstances would allow, and that a new cannery was being put up for the British Columbia Canning Co., situated at Saw-Mill Cove, on the west side of the river, about five miles from the harbor. A salting establishment had also been started at Fishery Bay, 20 miles up the river, by parties calling themselves the "Naas River Industrial Co." They had licenses for ten boats and nets, but sold most of the salmon which they caught fresh to the canneries. I am not sure whether the offal from either McLennan's or the Cascade Co.'s canneries would, if left to escape, do any injury to the river, the former being situated at least two miles and the latter nearly four miles from the nearest point at which salmon are caught. The managers, however, on my recommendation, prepared scows, which, when filled, were towed to a place indicated by me and the contents there dumped. As the British Columbia Canning Co. employed no steamer, and being situated a long distance from any suitable place for depositing their offal, they had a large perforated tank constructed, in which it was confined.

The number of Indians on the Naas who own fishing boats and nets, or who get boats and nets from the managers of the canneries and catch salmon for them on contract, at a stipulated price per fish, is yearly increasing. Formerly the cannery managers knowing how opposed the Indians were to taking license—as they believe that by so doing they would renounce forever the peculiar privileges which they now claim—always paid the license fee for as many as were fishing for them, preferring to do so rather than to have the Indians excited by being asked to take out licenses for themselves. This practice was having a bad effect, by tending to confirm the Indians in the belief that the law could not reach them, some of them going so far as to forbid their employers to pay for licenses for them.

On the 13th day of July I seized and detained a boat and net belonging to an Indian who had evidently been fishing, and on the 15th two more under the same

circumstances. This caused quite an excitement and a great deal of loud and threatening talk; but, after a few days, better counsels prevailed. Those more immediately interested listened to reason and signed applications for licenses. Upon their doing so I released the boats without exacting a fine—which, indeed, could not have been collected without the assistance of a large special force—but the point was gained. Afterwards, the Indians for whom Mr. McLennan applied for licenses came forward and made application in their own names. And here I would say that in any future regulation limiting the number of licenses to be issued on the Naas River the fact that a large number of Indians will doubtless make application for the same should be taken into account, and that to refuse them, would likely be productive of unpleasant results.

Several quarrels occasioned by Indian fishermen fouling each others' boats and nets occurred and threatened, to become formidable; but I succeeded in each case in inducing them to make good the damage when any had been done, and to promise to keep a proper distance apart when fishing in future. I considered this more advisable than the instituting of legal proceedings, which would have caused enmities and provoked retaliation, which is yet looked upon by a majority of the Indians as the first of all virtues. In a former communication I had the honor to call your attention to the very objectionable practice, common amongst Indian fishermen on the Naas, of carrying fire-arms in their boats when fishing. I will here only express the hope that means will be found to abate the evil.

The catch of salmon on the Naas and Skeena was less satisfactory than during the two preceding years. I have not been able to ascertain if years of scarcity and plenty occur at regular intervals on these rivers. At River's Inlet the same rule seems to hold good as on the Fraser—that on every fourth year there is an abundance of salmon. In connection with the Skeena, a fact came to my knowledge which will be interesting to you. In the year 1863, long before there was a cannery on the coast, there was a great scarcity, if not a total failure of salmon on that river, and the Indians who depended to a great extent on them for their supply of food for the winter, were reduced to a state of great destitution, and whole tribes had to remove to the Naas, where fortunately there had been an abundant supply of salmon saved, an where a trading post of the Hudson Bay Company had been established, and there they traded their furs, and any thing else they might have, and in some cases their children to the Naas Indians, for dried salmon. I have made many enquiries, but could not learn that anything approaching a total failure had occurred since that time on the Skeena.

I would recommend, that no net fishing for salmon be allowed on the Naas above Fishery Bay, which is well up towards the head of tide water, and above which the river is comparatively small.

Another very important matter, which I beg to submit for your information, is the fact that after the canneries are closed the Indians repair to the upper reaches of the river, in the vicinity of their villages, and proceed to catch a supply of salmon for their winter use, and also for sale fresh, to any persons who may wish to purchase for salting. They are well supplied with nets sufficiently good for their use; they fish almost entirely above tidal water, where the river is small, and in the vicinity of the spawning grounds.

I do not make this statement from my own observation, never having been on the Naas after the canning season was over, but from enquiries carefully made; and from what I know of the habits and methods of the Indians, no doubt need be entertained in regard to its correctness.

It is only within the last three years that the Indians on the Naas have been in the habit of using other than their native methods for securing salmon for their winter use.

The oolachan fishing on the Naas was quite successful in March, and the Indians obtained an abundant supply of the oil, which is such an important article of food with them, but no improvement has been effected in the wasteful and imperfect method used to extract it.

Salmon are the only fish sought after on the mainland side, although halibut are plentiful in many places. I heard of two American schooners catching good fares in the vicinity of Queen Charlotte Sound early in the summer.

In future more attention will be paid to seine fishing for salmon in the vicinity of the smaller rivers and creeks of the islands and mainland of the Province; and I would recommend that great care be taken to prohibit the very objectionable practice which prevails on the Alaskan coast, and in other places, of placing nets or obstructions across the entrance to small streams when the tide is out, so that the salmon which seeks to ascend with the flood tide may be kept back until a sufficient number has collected for a good haul with a seine.

In conclusion, I beg to state that a larger and more suitable boat is required, to enable a guardian on the Naas to perform his duties in a thoroughly efficient manner.

In regard to the catch of salmon on the Naas, I may say, by way of explanation, that in 1888 there was but one cannery, and the pack was about 12,000 cases, and there were about 1,500 barrels salted, and about 55 boats and nets used. This season the pack is between 19,000 and 19,500 cases, and in the vicinity of 500 barrels salted, and 124 boats and nets were employed. I consider this to be not far from the average capacity of the river.

RETURN showing the Number, Tonnage and Value of Vessels and Boats, and the Number of Men engaged in the Fisheries, Quantity and Value of Fishing Materials, Kinds and Quantities of Fish, &c., in the Province of **British Columbia**, for the Year 1889.

LOCALITY.	VESSELS AND BOATS EMPLOYED.							FISHING MATERIALS.						KINDS OF FISH.				
	Vessels.				Boats.			Gill Nets.		Seines.		Trawl Lines.						
	No.	Tonnage.	Value.	Men.	No.	Value.	Men.	Fathoms.	Value.	Fathoms.	Value.	No.	Value.	Salmon, barrels.	Salmon, fresh, lbs.	Salmon, smoked, lbs.	Salmon, in cans.	Sturgeon, lbs.
			$			$			$		$		$					
Fraser River and South to American Boundary	21	336	73000	57	645	33450	4435	120600	79760	1450	3700	....	....	2639	1708000	8700	14789856	258600
From Fraser River to Howe Sound	3	90	4000	15	10	1000	30	1500	1500	8	1600	50	500	40	120000	1000	.....	40000
Howe Sound to Smith's Inlet	....	....	.....	.....	6	310	18	940	580	200	700	....	....	....	3000	.....	.....	.....
Smith's Inlet to River's Inlet	1	15	5000	3	76	2805	389	16480	15360	....	.....	....	....	443	25000	.....	1234656	.....
River's Inlet to Skeena River	5	75	24000	16	317	13805	1324	92300	79800	460	1500	....	....	95	60000	.....	2803440	.....
Skeena River to Alaska Boundary	2	25	3700	8	195	6795	485	16975	11937	....	.....	20	200	169	25000	.....	950400	.....
East Coast of Queen Charlotte Island	....	.....	.....	.....	25	1500	50	2000	2000	600	800	100	1000	100	5000	.....	.....	.....
West Coast of Queen Charlotte Island	2	150	7500	15	10	1800	80	.....	.....	500	700	150	2000	....	.....	.....	.....	.....
Cape Scott, V. I., to Comox River	2	70	10000	12	12	520	85	....	....	400	1200	....	....	10	5000	1000	343776	.....
Comox River, V. I., to Victoria	6	75	4200	12	50	5000	125	.....	.....	3000	5000	150	2500	50	125000	1200	.....	.....
Victoria to San Juan	10	100	7000	25	10	1000	25	5000	2500	200	3000	100	1800	....	110000	1000	.....	20000
San Juan to Barkley Sound	2	40	1000	4	2	200	4	.....	.....	200	250	12	300	200	1000	.....	.....	.....
Barkley Sound to Cape Scott	2	80	400	10	6	800	....	.....	.....	200	300	....	....	....	.....	.....	.....	.....
Fur Seal Fleet from Victoria	23	1499	125000	559	213	21300	....	.....	.....	.....	.....	20	500	....	.....	.....	.....	.....
Sea Otter, Hair and Fur Seals purchased from Indians and others	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	.....	.....	.....
Totals	79	2555	264800	736	1577	90285	7050	255795	193437	7218	18750	602	8800	3746	2187000	12900	20122128	318600

RETURN showing the Number, Tonnage and Value of Vessels and Boats, &c.—Province of **British Columbia**—*Continued.*

LOCALITY.	KINDS OF FISH.												FISH PRODUCTS.				VALUE.
	Halibut, lbs.	Herrings, lbs.	Herrings, smoked.	Oolachans, salted, barrels.	Oolachans, fresh, lbs.	Oolachans, smoked, lbs.	Trout, lbs.	Assorted or Mixed Fish, lbs.	Smelts.	Rock Cod.	Skil, barrels.	Tooshqua.	Fur Seal Skins, No.	Hair Seal Skins, No.	Sea Otter Skins, No.	Fish Oils, gallons.	
																	$ cts.
Fraser River and South to American Boundary	16050	12000	1500	40	8500	1000	2025	16725	2100	1250	....	8350	.....	.....	.....	.....	1,991,289 97
From Fraser River to Howe Sound	150000	53000	4500	15	45000	....	3000	34000	45000	22000	....	130000	.....	.....	.....	.....	42,150 00
Howe Sound to Smith's Inlet	.....	.....	.....	....	.....	....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	300 00
Smith's Inlet to River's Inlet	.....	.....	.....	....	.....	....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	155,088 72
River's Inlet to Skeena River	2000	.....	.....	50	.....	500	.....	.....	.....	.....	25	.....	.....	.....	.....	3750	346,237 80
Skeena River to Alaska Boundary	5000	4000	2000	250	2000	5000	.....	.....	.....	.....	.....	.....	.....	.....	.....	350	122,763 00
East Coast of Queen Charlotte Island	20000	.....	12000	....	.....	.....	.....	10000	.....	.....	25	.....	.....	.....	.....	30000	19,500 00
West Coast of Queen Charlotte Island	50000	.....	2000	....	.....	.....	.....	50000	.....	.....	1510	.....	.....	.....	.....	2000	24,320 00
Cape Scott, V.I., to Comox River	5000	10000	.....	....	.....	.....	2000	5000	.....	1000	.....	.....	.....	.....	.....	500	43,553 12
Comox River, V.I., to Victoria	200000	50000	6000	10	12000	200	2000	90000	5000	10000	....	50000	.....	.....	.....	2000	36,680 00
Victoria to San Juan	150000	50000	50000	15	15000	....	5000	100000	.....	5000	....	80000	.....	.....	.....	1000	34,600 00
San Juan to Barkley Sound	6000	10000	.....	....	.....	....	.....	15000	.....	.....	.....	.....	.....	.....	.....	1500	4,400 00
Barkley Sound to Cape Scott	1000	1000	.....	....	.....	....	.....	2000	.....	.....	.....	.....	.....	.....	.....	100000	50,200 00
Fur Seal Fleet from Victoria	.....	.....	.....	....	.....	....	.....	.....	.....	.....	.....	.....	29570	....	15	320	297,360 00
Sea Otter, Hair and Fur Seals purchased from Indians and others	.....	.....	.....	....	.....	....	.....	.....	.....	.....	.....	.....	4000	7000	100	.....	55,250 00
Total	605050	190000	33000	380	82500	6700	14025	322725	52100	39250	1560	268350	33570	7000	115	141420	3,223,692 61
Oysters, 3,000 sacks, at $1.75, $5,250 ; Clams, 3,000 sacks, at $1.75, $6,125																	11,375 00
Mussels, 250 sacks, at $2, $500 ; Crabs, 175,000, at 3c., $5,250																	5,750 00
Abelones, 100 boxes, at $5, $500 ; Isinglass, 5,000 lbs., at 35c., $1,750																	2,250 00
Estimate Fish consumed in the Province																	100,000 00
do Shrimps, Prawns, &c., consumed in the Province																	5,000 00
Grand Total																	3,348,067 61

RECAPITULATION.

YIELD and Value of the Fisheries of the **Province** of **British Columbia** for the Year 1889.

Kinds of Fish.		Quantity.	Price.	Value.
			$ cts.	$ cts.
Salmon in cans	Lbs.	20,122,128	0 12	2,414,655 36
do fresh	"	2,187,000	0 10	218,700 00
do salted	Brls.	3,749	10 00	37,460 00
do smoked	Lbs.	12,900	0 20	2,580 00
Sturgeon, fresh	"	318,600	0 05	15,930 00
Halibut do	"	605,050	0 05	30,252 50
Herrings do	"	190,000	0 05	9,500 00
do smoked	"	33,000	0 10	3,300 00
Oolachans, fresh	"	82,500	0 10	8,250 00
do smoked	"	6,700	0 20	1,340 00
do salted	Brls.	380	10 00	3,800 00
Trout, fresh	Lbs.	14,025	0 10	1,402 50
Fish, assorted and mixed	"	322,725	0 05	16,136 25
Smelts, fresh	"	52,100	0 06	3,126 00
Rock Cod	"	39,250	0 05	1,962 50
Skil, salted	Brls.	1,560	12 00	18,720 00
Tooshqua, fresh	Lbs.	268,350	0 05	13,417 50
Fur Seal Skins	No.	33,570	10 00	335,700 00
Hair do	"	7,000	0 75	5,250 00
Sea Otter Skins	"	115	100 00	11,500 00
Fish Oils	Galls.	141,420	0 50	70,710 00
Oysters	Sacks.	3,000	1 75	5,250 00
Clams	"	3,500	1 75	6,125 00
Mussels	"	250	2 00	500 00
Crabs	No.	175,000	0 03	5,250 00
Abelones	Boxes	100	5 00	500 00
Isinglass	Lbs.	5,000	0 35	1,750 00
Estimate of fish consumed in the Province				100,000 00
do shrimps, prawns, &c., consumed in the Province				5,000 00
Total				3,348,067 71
Estimated consumption by Indian population—				
Salmon	$2,732,500 00			
Halibut	190,000 00			
Sturgeon and other fish	260,000 00			
Fish oils	75,000 00			
				3,257,500 00
Grand Total, approximate yield, 1890				6,605,567 61

NUMBER and Value of Vessels, Boats, Nets, Trawls, &c., engaged in the Fisheries of **British Columbia** during the Season of 1889.

Material.	Value.	Total.
	$ cts.	$ cts.
79 Vessels, 2,555 tons	264,800 00	
1,577 Boats	90,285 00	
255,795 Fathoms Gill Net	193,437 00	
7,218 do Seines	18,750 00	
602 Dogfish and Halibut Trawls	8,800 00	
		572,672 00
31 Canneries, complete	681,000 00	
3 Oil Factories	18,500 00	
2 Freezing Establishments	10,000 00	
9 Salting do	30,000 00	
		739,500 00
Grand Total		1,315,772 00
736 Sailors and Hunters		7,786
7,050 Fishermen and Cannerymen		

THOMAS MOWAT,
Inspector of Fisheries for British Columbia.

APPENDIX No. 10.

SPECIAL REPORT ON SAWDUST, LAHAVE RIVER.

DOMINION SS. "ACADIA,"
GEORGETOWN, 24th September, 1889.

Hon. CHARLES H. TUPPER,
Minister of Marine Fisheries,
Ottawa.

SIR,—In accordance with the direction given me in your letter of the 27th June, to visit the Lahave River and report fully on each allegation contained in a certain petition, addressed by the Messrs. Davidson and the inhabitants of the Lahave valley to the Minister of Marine and Fisheries, I have the honor to report as follows:—

On Monday, the 8th September, I proceeded to the Lahave and spent the four days, Tuesday to Friday inclusive, in making a personal examination of the river bed between Conquerall Bank and the town of Bridgewater.

In considering the various clauses of the petition sent me for report I find that, stripped of superfluous verbiage, the following are the definite allegations made:—

1. Clause one states that the subsequent clauses contain the opinions of the signers after forty years lumbering on the river.

2. Clause two contains three allegations, viz.: (*a*) That the current and tide carry the sawdust out to sea; (*b*) that the fisheries have not been injuriously affected by sawdust; (*c*) that the channel of the river has not been made any shallower.

3. Clause three states somewhat as in (*a*) of 2, adding that the steep banks and straight course of the river admits of free discharge of the sawdust.

4. That the water mills were constructed prior to the passing of the Act of 1873, and that the water-power would have to be abandoned if compelled to remove the sawdust.

5. That cheap manufacture is necessary to enable these mills to compete with the United States lumber producers in foreign markets.

Clause one requires no comment, save to remember that the following clauses are said to be matters of opinion; they are not declared to be statements of fact, and an investigation of the facts will show how far the opinions of the signers of the petition have been carefully and correctly formed.

Section (*a*) of Clause 2 says that the current and tide between Bridgewater and the sea are sufficiently powerful to sweep all the sawdust out to sea.

In the course of my enquiries I only met one person who claimed to have seen any quantity of sawdust floating at sea, and he claimed to have seen sawdust floating off Ironbound Island at the mouth of the river.

I have, however, myself made a careful examination of the portion of the river between Conquerall Bank and Bridgewater, and find a vast accumulation of sawdust extending from Wegel's Island to the railway wharf. The current, purely tidal, flows at the rate of from half a knot to a knot an hour, with a considerable period of slack water at the turn of the tide. Higher velocities than these occur in places, but at the ships' anchorage this was the average rate of surface flow at the time of spring tides when we were there. And as the distance from Mosher's Island light to Bridgewater, that from the sea to Bridgewater is thirteen nautical miles, it would require a constant excess of ebb over flow of a considerable amount and a current velocity of upwards of two knots per hour throughout the whole time of ebb in order to carry the sawdust out to sea. As a matter of fact the velocity

decreases with the depth, and therefore the surface flow of one knot per hour measured at Conquerall Bank is not likely to be exceeded, and is, I consider, a fair estimate of the average velocity at spring tides; and as ebb and flow are nearly equal it follows that sawdust taken by the tide is carried down so far and brought back again. And apart from the question of the observed fact of the presence of the sawdust, the action of the tidal current would lead one to expect that the vast bulk of the sawdust must be deposited within a comparatively short distance of the head of the tide, as is here found to be the case, all the sawdust being located within two miles of the railway wharf just below the town.

This allegation (*a*) of 2 is, therefore, clearly erroneous; the current and tide in the Lahave do not carry the sawdust out to sea.

Section (*b*) of 2 is the old statement that sawdust does not, and in this instance has not injured the fisheries of the Lahave.

The evidence I was able to procure was unanimous on the one point, that the fisheries of the Lahave were formerly very productive; one witness quotes the case of a ship being loaded at Bridgewater, with salted fish, salmon and gaspereaux, and shipped to the West Indies, the whole cargo being the produce of the river. As against this I give the following table compiled for me by Mr. C. E. Godard, fishery overseer at Bridgewater.

Year.	Salmon. Lbs.	Alewives. Brls.	Shad. Doz.	Smelts. Brls.
1881	2,800	20	1	15
1882	2,600	18	1½	13
1883	2,400	22	2	15
1884	3,200	23	2	10
1885	3,000	25	2	12
1886	3,500	20	5	10
1887	4,900	21	6	13
1888	3,600	6	2	16
1889	3,360	5	2½	18
Average	3,262	18	2½	13½

The whole value of the average annual catch has therefore been reduced to something less than five hundred dollars. Hence the injury to the fishery is clearly proven, and it remains to show what part the defilement of the river by sawdust has played in this injury.

Opinions of experts are divided on the subject; all admit that sawdust deposited on a spawning bed ruins it; but the case is not now one of defiling a spawning bed, but of the absolute pollution of the whole body of the river by a festering mass of rotting sawdust which is, in places, six feet thick. The water is constantly, or was so during my stay on the river, turbid, its waters have a great lack of transparency, so much was this the case that, on one occasion when my sounding boat grounded on a sunken crib, sitting in the stern of the boat, I could not see the crib, though within a few feet of it and it only a few inches below the surface. It is conceivable that this mass of matter if allowed to rest inert might not affect the passage of the anadromous fishes, but the passage up and down the river of steamers and tug boats, and indeed of sailing vessels too, stirs up this deposit and gives the water in the neighborhood a hue of ink and an odor to which assafœtida would be preferable. Such a condition of the water maintained permanently, would, I believe, bar the fish as effectually as a dam, and its occasional occurrence must militate against the good of the fishery, even if the noxious gases generated fail to kill them. Some of the theorists who hold that a fish cannot be hurt by sawdust, ask their opponents to produce the dead bodies of the fish which have been killed by the sawdust accumulations; but I hold that it is in no sense necessary to kill these mother fish in order to ruin the fishery. If, by foul waters, you turn these anadromous fishes back to the sea, you injure the fishery as effectually as if you had killed the fish; and it seems

to me that, in the process of nature, nothing is more likely than that fish seeking their spawning places, and coming into water, turbid and charged with noxious gases, should, with that instinct of self-preservation implanted by the Creator in all His living creatures, turn back towards that ocean whose magnitude renders it impossible of defilement. I think it may be fairly conceded that there is no more injury to a river in fresh floating sawdust than there is in fresh floating boards, but the boards will continue to float, whilst the sawdust becomes soaked, sinks to the bottom, and becomes the foul and rotting mass which does defile the waters.

In the course of a former investigation, I have got evidence of salmon having been found dead away from nets and having sawdust in their gills, and showing no mark of any disease or injury of any kind. I think in this case it is a legitimate inference, that the water-soaked sawdust, disturbed and floating thick in the foul water did kill these fish, either by drowning or being poisoned by the gases, the fish died or was rendered helpless, and when the body relaxed and the gills opened, the sawdust would get in and drown the fish if it was not dead before.

As an authority on this subject I quote the following from a recent report by Mr. A. D. Berrington, Chief Inspector of Fisheries to the Imperial Board of Trade. He says: "I have drawn the attention of the Fishing Board to these cases, and also "to the introduction of sawdust into the river, which is deadly to fish from its "choking their gills." That the almost total destruction of the fisheries on the Lahave River is entirely due to sawdust defilement, no one will be found to assert, but that sawdust is injurious to river fisheries is, I think, equally certain, and in the case under consideration, the physical characteristics of the river make it, in my opinion, particularly noxious.

I, therefore, consider that section (*b*) of clause 2 is incorrect, and that the sawdust in the Lahave River has injuriously affected the fisheries therein.

Section (*c*) of clause 2 contains the assertion that the channel of the river has not been made any shallower by the sawdust deposit.

The only and complete answer to this is to be found in the plans and sections attached to this report, showing the condition of the bed of the river along the lines laid down and lettered in the plan. In the sections the horizontal scale is 250 feet to the inch, and the vertical scale is 10 feet to the inch. This, of course, distorts the view of the channel, but the relative depths of water and sawdust are in true proportion as seen on these sections.

In making the survey all soundings were reduced as nearly as possible to Admiralty datum, which is mean low water level at spring tides, and I think that the soundings are comparable with those on the Admiralty chart within a few inches. In mid-channel along the line EF the chart gives 24 feet where now only 17 and 18 feet can be found, thus showing that the depth of the channel has been reduced. I was also informed when at work that on the flats represented on the sections FG and GH, vessels used to lie and load without grounding. The cause of the present inability to do this is readily seen on examining these sections, for we find now on FG only 7 and 5 feet of water where formerly 11 and 9 existed, and on GH 6 feet of sawdust is fairly heaped up nearly all the way across. The deep water channel represented on the plan as lying within the red dotted lines is a channel of 10 feet and over at low water, and by the accumulation of sawdust in the channel and on the flats this has been contracted just below the point F to but little over 100 feet in width and reduced in depth by from 4 to 5 feet. Capt. Holmes' letter, quoted by the Messrs. Davidson as evidence of the non-obstruction of the channel, bears to me the very opposite construction, for though his ship was lightened to 15 feet 6 inches at high water neap tides, she would have, as the neap rise over low springs is 4 feet, two places to pass over where she would be ploughing through six inches of sawdust. Under these circumstance it is scarcely surprising that the valves choked and the ship stayed on the bank over a tide.

In order to obtain some idea not only of the magnitude of the interests involved but of the quantity of sawdust manufactured, I obtained from the Collector of Customs at Bridgewater the following return.

STATEMENT of Lumber shipped from the Port of Bridgewater, during the two years ending 31st December, 1887 and 1888.

DESCRIPTION OF LUMBER.	Unit of Quantity.	SHIPPED TO FOREIGN COUNTRIES.		* SHIPPED COASTWISE.		TOTAL.	
		Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
1887.			$		$		$
Boards and plank	M. ft.	7,877	86,226	1,603	*13,444	9,480	99,670
Scantling	"	29	389	.....	.....	29	389
Laths	M.	644	654	134	199	778	853
Shingles	"	1,352	1,980	2,733	2,605	4,085	4,585
Palings	"	71	480	4	25	.....	505
Totals	.....	.....	89,729	.....	16,273	.....	106,002
1888.							
Boards and plank	M. ft.	9,179	98,705	1,718	*13,868	10,897	112,573
Scantling	"	27	272	20	150	47	422
Laths	M.	1,605	2,676	164	245	1,769	2,921
Shingles	"	631	633	4,448	4,056	5,079	4,689
Palings	"	143	1,057	12	73	155	1,130
Totals	.....	.....	103,343	.....	18,392	.....	121,735

* Shipments coastwise are only estimated, for an accurate statement cannot be had, owing to vessels with coasting licenses not been required to mention cargo.

JAS. A. RUSSELL,
Acting Collector.

OUTPORT OF BRIDGEWATER, 12th September, 1889.

The above return shows that the actual amount of sawn lumber exported from Bridgewater in the years 1887 and 1888 was 20,377,000 ft., B.M., or upwards of 10,000,000 ft. per year. These years were, I understand, considered under the average; and in considering the amount of sawdust produced in order to cover that made in the manufacture of lumber for home consumption in the district, and that arising from the manufacture of shingles, laths, paling, &c., it will be, therefore, I think, a fair estimate if we allow that as much sawdust has been produced as if the mills cut regularly 14,000,000 ft. per annum.

In sawing approximately twenty-five per cent. of the cut is made into sawdust. Now, this 14,000,000 ft. represents, say, 1,166,666 cub. ft., and twenty-five per cent. of this will be the cubical mass of solid wood which is reduced to dust in the process of manufacture, and amounts to 291,666 cub. ft. As sawdust this bulk will be increased between three and four hundred per cent., and in the loose state in which it is found at the bottom it will occupy a space four times or more that of the solid wood, hence we may say, assuredly, that very nearly 1,200,000 cub. ft. of sawdust annually has found its way into the Lahave, say for the past twenty years, and we have 24,000,000 cub. ft.

If we now turn to the plan we find that the sawdust area between the railway wharf and the ship is, approximately, 9,000 ft. long by 800 ft. wide, and on examination of the section shows an average depth of sawdust of say three feet, thus giving a mass of sawdust within the area of 21,600,000 ft.; and if we allow that the average depth is nearly 3½ ft. we should have an amount very closely agreeing with the sawdust accumulation of twenty years.

And when it is borne in mind that the gauge which we had for measuring the sawdust was blunt at the end, and did not in all cases get through the sawdust to

the true bed of the river, and, further, that the lumbering business has been carried on in this river for forty years, the difficulty of obtaining anything like exact measures will be understood. Suffice it to say that in the part of the river examined there is deposited a vast mass of sawdust; that this sawdust has contracted and shallowed the navigable channel of the river, and I consider that to permit the continuance of the practice of running the sawdust into the river would be to assent to injury, if not to the obstruction of the navigation of the river.

Section *c* of clause 2 therefore incorrectly states that the channel of the river has not been made any shallower.

Clause 3 of the petition states that the banks of the river are steep and its course straight from Bridgewater to the sea. The facts that the channel is tortuous and alternating between open stretches and narrow bends: on the open stretches are wide flats and bays and coves line the banks, with here and there sharp points and islands, the channel winding from side to side of the river.

Clause 4 says that the water-power would have to be abandoned if compelled to remove the sawdust. I duly examined the three large gang mills situated at Bridgewater, two being Messrs. Davidson's mills and the third Messrs. Cook & Co.'s. At Messrs. Cook's and at Davidson's upper mills it will be quite possible to save the sawdust, but the lower mill is very awkwardly situated on the edge of the river with the highway immediately contiguous and the railway just beyond and on the far side of the railway the hill rises abruptly. At this mill the only way of disposing of the sawdust will be by the erection of a furnace.

Mr. Davidson, senior, told me that he considered under the old system that he could saw the lumber very cheaply and from what I can learn it is with most of the millers a question only of so much extra cost to arrange for the legal disposal of the sawdust, nor do I, as a matter of individual opinion, think that the due enforcement of the Sawdust Act will necessitate the abandonment of the water-power mills.

Clause 5 speaks of the competition with United States' lumber producers in foreign markets; but it should be remembered that much of this competition in the West Indies and South American markets is not that of United States' lumbermen, but of Canadian lumber exported *via* New York, and manufactured by people who are subject to the enforcement of the Act petitioned against.

In any case such as the present, the popular tendency is to magnify the value to the community of the threatened industry, and it was impressed on me by almost every one whom I met at Bridgewater, that it would be a fatal blow to the district if the mills were shut down. I hold very strongly that there will be no necessity for such shutting down, but that the whole matter is in the hands of the saw-millers, to whom it undoubtedly means reduced profits, more or less dependent on the particular surroundings of each mill. Now, let us compare the value produced by the lumber interest in the Lahave district with another great industry whose success or failure is more or less interwoven with this subject. I allude to the fishing industry. This industry here employs in all 1,746 men, in 76 ships and 750 boats, these men had a capital afloat and fishing gear of $212,300, and they actually produced, according to the official returns for 1888, fish and fish products to the value of $615,-107.50. Whilst the lumber business employing less than one-tenth the number of men, produced in the same year for export, over and above district consumption, lumber and wood products to the value of $121,735. The fishing industry is the employment of the people, and the prosperous community whose picturesque and comfortable homes line the banks of the Lahave river, from Mosher's Island to Conquerall Bank, are in no sense dependent for their living on the success or failure of the lumber industry, but in a certain sense a large number of them are gravely interested in the pollution of the river and its effect on the supply of anadromous fishes.

It has been a matter of common observation for some years that the deep sea fish are continually receding from our shores, and as a consequence those who are engaged in the shore or boat fishery have continually to go farther to sea after their fares,

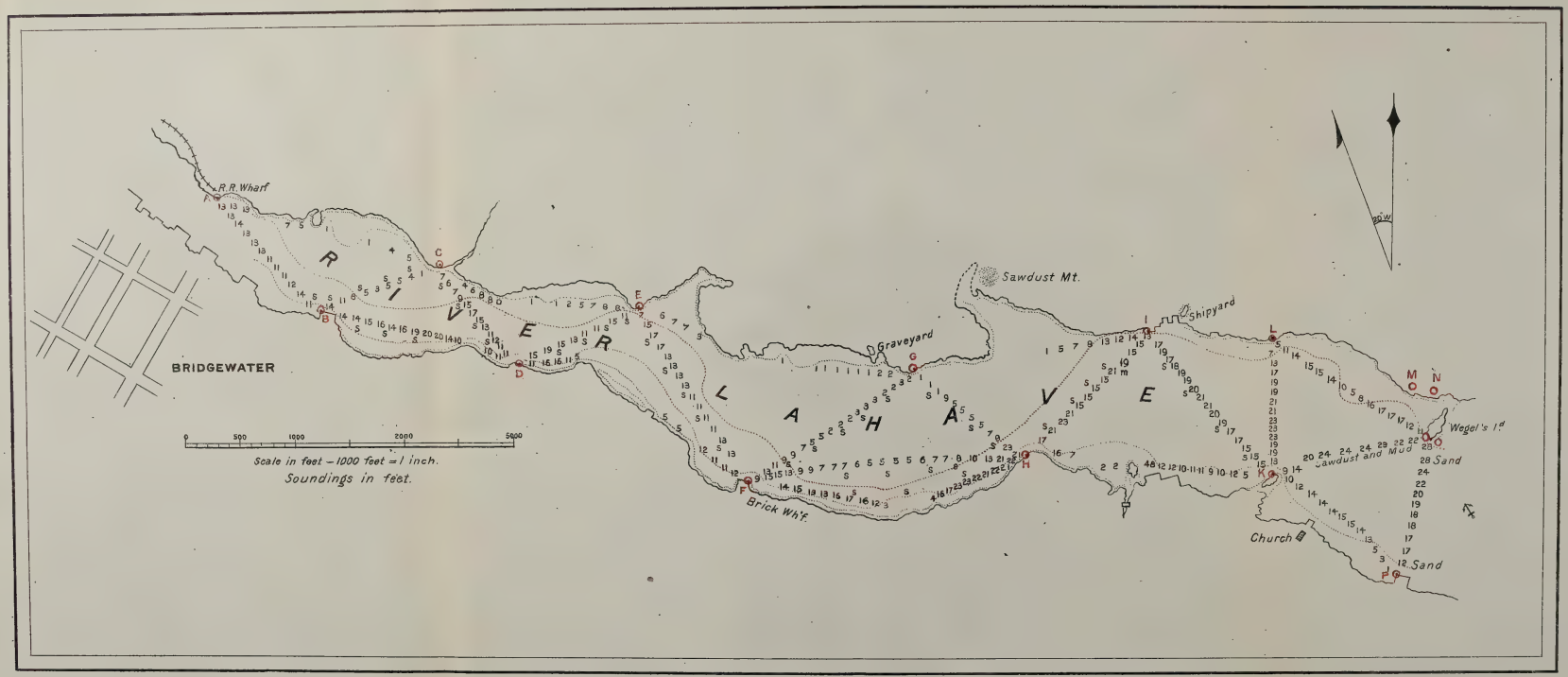
and the fishery is, as a matter of necessity, much more affected by unfavorable meteorological conditions.

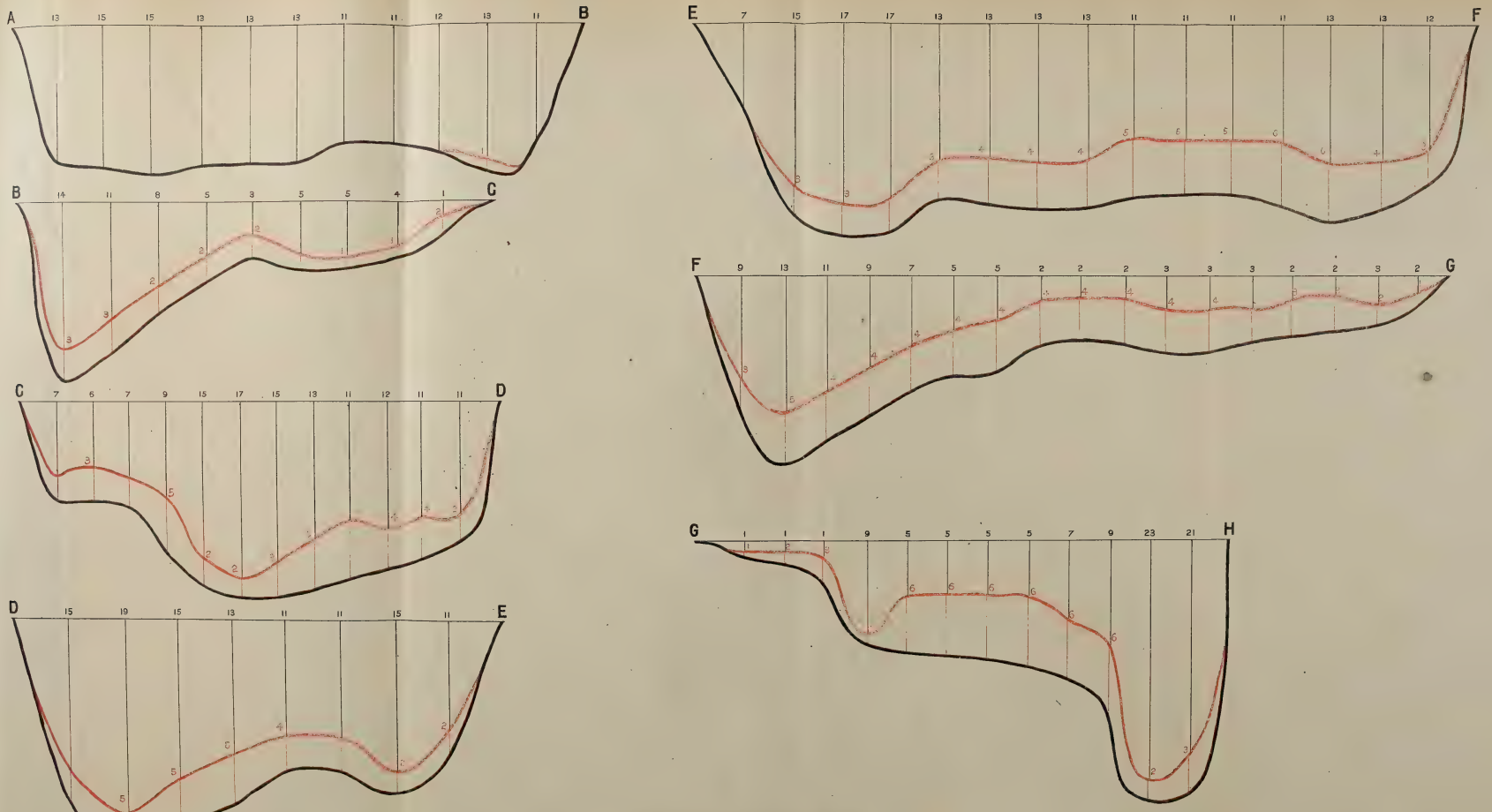
The cod-fishery, in which as a boat fishery, there are 1,060 men in 750 boats employed in the Lahave district, is the sea-fishery more than any other bound up in the existence of the anadromous fishes. Where there are no anadromous fishes as on the New England coast, we find no shore cod-fishery. The cod-fish comes into shore to feed, the herring comes in to spawn. If, by the destruction of anadromous fisheries, we destroy the countless millions of young fry of gaspereaux, shad, salmon, trout and smelts, we remove a source of food supply from our people in the destruction of the parent fish, but the loss of the young fry is the loss of the cod-fishery, for when there is no bait the fish will not come in. It is on this ground that the pollution and obstruction of our rivers must be looked at, not that the pollution or obstruction of this river has merely destroyed the fish that formerly frequented the river, but that it has seriously and injuriously affected our great standard fishery, the shore cod-fishing.

Viewing the whole circumstances connected with the Lahave River I can see no possible reason or excuse for granting the exemption prayed for in the petition.

I have the honor to be, Sir,
Your obedient servant,

ANDREW R. GORDON,
Commander Fisheries Protection Service.

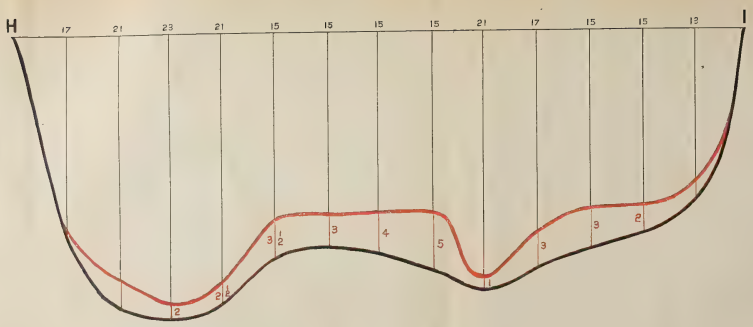

R.R. Wharf
BRIDGEWATER
RIVER
LATHAM
Graveyard
Sawdust Mt.
Shipyard
Brick Wh'f.
Church
Wegel's Id
Sawdust and Mud
Sand
Sand
0 500 1000 2000 5000
Scale in feet – 1000 feet = 1 inch.
Soundings in feet.

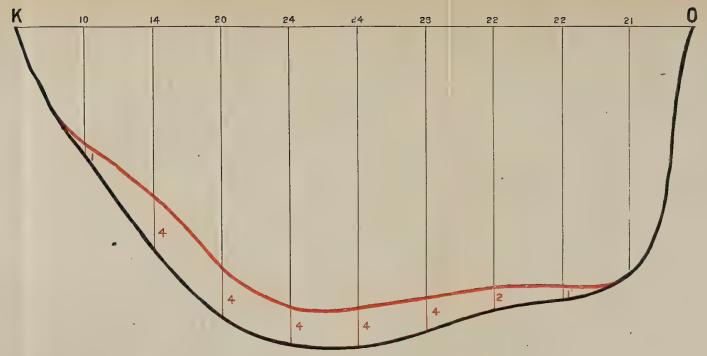


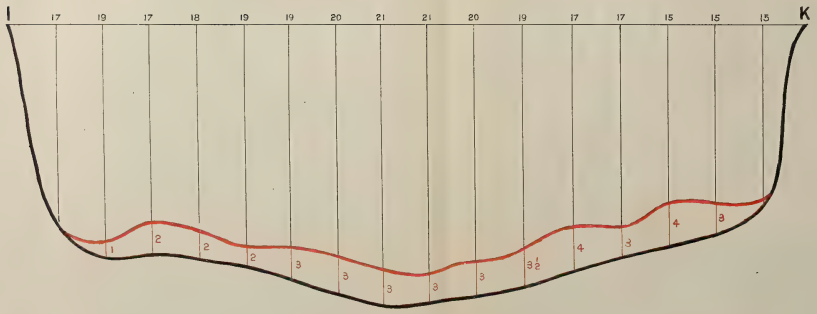
CROSS SECTIONS OF LAHAVE RIVER

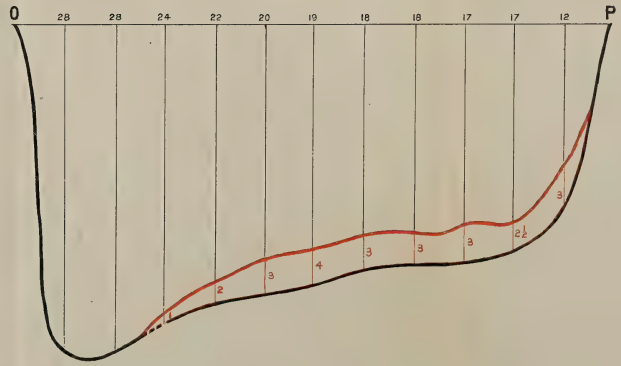
along lettered lines on the plan, shewing sawdust in red.

Hor. scale, 2 inch = 250 feet. Vert. scale, 1 inch = 10 feet.









NOTE.—*In the figures* **KO**, *and* **OP**, *the accumulation marked in red consists of sawdust, mixed with mud, all other diagrams show pure sawdust.*

APPENDIX No. 11.

SPECIAL REPORT ON SAWDUST.

OTONABEE RIVER.

OTTAWA, 9th October, 1889.

To the Honourable CHARLES H. TUPPER,
Minister of Marine and Fisheries, Ottawa.

SIR,—The undersigned submits the following regarding the subject of sawdust and mill refuse being cast into the Otonabee River:—

Pursuant to your instructions, I proceeded to Peterboro' on the 28th ult., to examine into certain statements and counter-statements regarding the casting of sawdust and mill rubbish into the Otonabee River, and to personally inspect the mills thereon, with the view to deal intelligently with the particulars which were submitted to your Department in certain reports from Mr. Chas. Gilchrist relating to this matter.

After making a personal inspection of the several sawmills referred to in your letter of instructions, and from interviews had with the proprietors of these sawmills and other leading persons, I have to report that the position of affairs, as represented to your Department in the reports made by Mr. Gilchrist regarding the casting of sawdust and mill refuse into the Otonabee River by the proprietors of the sawmills thereon, is, from what I witnessed myself and learned from the proprietors themselves, and from other reliable sources, substantially correct, and can be readily verified by numerous eye-witnesses of the facts as therein related.

The Otonabee River is one of considerable magnitude, and the principal outlet of numerous lakes in the rear of Peterboro', from which it takes a southerly course of some thirty miles and discharges into Rice Lake, the waters of which pass down the Trent River to the Bay of Quinté and into Lake Ontario. Some twenty miles up the Otonabee from Rice Lake is the town of Peterboro'; above this town, up the river to the village of Lakefield is about twelve miles, and on this stretch of the stream are the saw mills herein referred to. Along this twelve miles the river is quite rapid, across which several dams are built, forming numerous water-powers for driving sawmills and other manufactories of various kinds. The portion of the river below the town of Peterboro', down to Rice Lake, is dull and sluggish in its current and navigable for steamboats and other crafts.

On the 12-mile stretch above Peterboro' six large sawmills have been running for several years past. The sawdust and mill refuse made from them has been unrestrictedly cast into the river until quite lately. In 1886 the corporation of Peterboro' Board of Health and many of the leading citizens of Peterboro' petitioned for the enforcement of the law to stop this hurtful agency for destroying fish-life and impeding navigation. Action was taken by the Fisheries Department to carry out the demand of petitioners by enforcing the provisions of the Act, and notices were given to the several mill-owners to stop this illegal and injurious work. The mill-owners demurred to this, stating that sawdust and mill-refuse did not seriously affect fish life, nor did it retard navigation; and should they be compelled to carry out the law in its entirety they would be obliged to close down their mills, and thereby deprive many men of their usual means of employment. Whereupon, in April, 1886, a sort

of compromise was made, by which it was understood that if the proprietors of the mills would keep out of the river all mill rubbish as well as sawdust, except that falling from the saws into the pitman-holes the mill-owners on the Otonabee River would not be prosecuted at the instance of the Department.

In April, 1888, it was represented to the Department by the Corporation of the Town of Peterboro' and by leading men that this promise made by the mill-owners had been evaded and was not kept, and they were notified in January, 1889, that the law regarding sawdust and mill refuse would be enforced the following spring, and Fishery Officer Gilchrist was instructed to prosecute any violations of the Act.

During the months of July and August last past Officer Gilchrist made several visits to these mills, and found the promises made by the mill-owners were evaded, and that sawdust was being cast into the river, contrary to the law; whereupon complaints were made before the police magistrate, convictions were obtained, the penalties on which, in most cases, remain at the present time unpaid.

Whilst some of these mill-owners have shown a disposition to put in machinery for preventing sawdust from falling into the river, others, notably Messrs. Hazlett and Irwin, have made no effort to do so, their contention being that the former agreement made by them in 1886 to dispose of all sawdust and mill refuse, except what might necessarily fall through the pitman-holes, has been fairly kept, and that they cannot do more without in effect closing up their mills.

Having visited the locality, and closely examined these mills, I submit the following facts in relation to them; and for brevity, and better comprehension, the mills will be numbered from 1 to 6, inclusive, commencing with Nos. 1, 2 and 3, which are lowest down on the river and within the limits of the town of Peterboro'. All three are owned by the Hazlett Company:

No. 1. This mill is on the east side of the river, and is worked by circular saws, and no difficulty should be experienced on this account, for fully complying with the requirements of the law. At the time of my visiting this mill there were no outward indications of sawdust running into the river from the tailrace; workmen were engaged carting it away. I was, however, informed by credible persons who passed by the mill daily, that sawdust was frequently seen floating down the tail race into the river.

No. 2 is on the west side of the river, and is also worked with circular saws, principally for manufacturing shingles and laths. Here the Act appears to be fairly complied with.

No. 3 is the largest of the Hazlett mills, with a large capacity for work, having four gangs of upright saws, with one large circular saw and several smaller ones. No satisfactory provision is made at this mill to dispose of the sawdust, all made by the gang-saws falling directly into the water underneath the pitman-holes, showing constant streams of sawdust running from both tail-races of the mill. Carriers were in operation, for carrying away sawdust and other refuse from the circular saws on the main floor of the mill.

No. 4. This mill is further up the river, and belongs to Mr. Hilliard. It is of much less capacity than those above mentioned, having one set of gang-saws and one circular saw. Here an arrangement is made by which the larger proportion of sawdust falling through the pitman-hole drops on an inclined platform, then slides into carriers, which convey it outside the mill to be carted away. Some sawdust, nevertheless, falls into the river from the saw, and from the floor, which is sufficiently open to permit it passing through.

No. 5 is Irwin's mill, still further up stream. This is a large mill, with a capacity for cutting 100,000 feet of lumber daily. It has four large gangs of saws, one large circular saw, and several smaller ones for cutting laths, edgings, &c. This mill was not in operation at the time of my visit to it, being shut down for the season; therefore, no visible evidence was presented regarding the action of sawdust. It was quite apparent, however, that no provision was made to carry sawdust, &c., away from the four gangs of saws; it must necessarily all fall directly into the river, as there is nothing to prevent it. The quantity of sawdust passing into the river from

these four gangs would be fully three-fourths of the whole product of the mill. These facts were obtained from and freely given by the foremen of the mill. The sawdust and refuse from the large circular saw and smaller ones on the main floor were, apparently, intended to be taken away by carriers, arranged to convey refuse, to a burning pit some distance away, but the numerous holes and other means for leakages through the floors would indicate the chances of a considerable portion of sawdust, &c., falling through into the water below. The impression given by the foreman (who was a very intelligent man) was that the mill would require considerable remodelling to insure the prevention of sawdust and refuse going into the river.

No. 6 is Strickland's mill, about six miles above No. 5, at the village of Lakefield. A large amount of lumber is made here. The mill runs two gangs of saws, and and one circular saw, and other smaller ones. The disposition of these owners to prevent sawdust and refuse going into the river is at present very satisfactory. Since the notification given them by your Department they have put inclined tables under the gang-saws, which catch the sawdust falling down the pitman holes, sliding it into carriers, which convey it some distance out of the mill, to be carted on waste land, and filled into open piers under construction alongside the mill. The slabs and coarser refuse from this mill are consumed in a fire pit. The proprietors of this mill not only gave practical evidence, but also expressed a strong desire to comply with the law, in so far as it was possible to do so. The appliances put in this Strickland mill to prevent sawdust and refuse going into the river, although not quite perfect, might be made complete, and equally applied to the Hazlett and Irwin mills, if there were any disposition on their parts to do so.

In a summary of particulars regarding these mills on the Otonabee River, from the personal inspection of them made by myself, together with the information obtained from the mill-owners themselves, and from persons engaged in the navigation of the river, and others interested in the protection of fish and their propagation, and also from leading prominent men, citizens of Peterboro'—voluntarily given by all —I submit the following to be my conclusions regarding the subject under consideration, viz.:—

1. That it can be established beyond all doubt that the Otonabee River is filling up, and its navigation is being impeded, by the sawdust and mill refuse cast into it, contrary to law, from the sawmills herein mentioned.

2. That fish-life, and the reproduction of fish, has been and is at the present time very seriously affected, by reason of the vast quantities of sawdust and mill rubbish cast into the waters of the Otonabee River from the sawmills referred to above.

3. That the understanding come to in 1886 between the Department of Fisheries and the mill-owners on the Otonabee River, for "allowing all sawdust falling through the pitman holes from gang-saws to pass into the river," was so largely in favor of the mill-owners that they ought to have most willingly complied with it; but from avarice and evasion they did not, and do not, comply with that agreement.

4. That with the due notice given by your Department to the mill-owners of the Otonabee River to desist from their illegal course and to comply with the laws relating to sawdust, &c., and their refusal to do so, fines have been inflicted upon them, which, if remitted, will undoubtedly seriously reflect upon the interests of your Department, should cases of a like nature regarding sawdust, &c., arise in other parts of the coutry.

5. That the statement put forth by the mill-owners on the Otonabee River "That all sawdust and mill refuse which they can reasonably be asked to keep out of the river is kept out, and that their mills are so constructed as to render it impossible to entirely prevent sawdust from falling into the river; and that to enforce the provisions of the 'Fisheries and Navigable Rivers Act' will result in a stoppage of their work, and the throwing out of employment of some six hundred men," are incorrect and untenable, from the simple fact that two out of the four of these same mill-owners are, at the present time, by a simple and comparatively inexpensive appliance in their mills, preventing almost the whole of the sawdust which falls

through the pitman holes from their gang-saws from going into the river; and this same remedial measure is equally applicable to the other mills worked on this river by Messrs. Hazlett and Irwin, or in fact anywhere else.

6. That any concession made to sawmill owners by which they may be allowed to let all sawdust, made from gang-saws, to pass through the pitman-holes into the river, is almost tantamount to exempting that mill from the operations of the "Fisheries and Navigable Rivers Acts" relating to sawdust, &c.—for in the manufacturing of ordinary lumber, from ordinary saw logs, it is held that about one-fifth becomes sawdust, and seven-eighths of this sawdust will necessarily fall down through the pitman holes into the river below, unless otherwise prevented.

7. That all sawdust can, by the exercise of a certain amount of ingenuity and by the application of comparatively inexpensive machinery, be conveyed out of nearly all sawmills in the country, when it can be dumped into fire pits to be consumed, or it may be otherwise disposed of. This is practically illustrated in a very great measure at the Strickland's mills on the Otonabee River, where nearly the whole of the sawdust from their two gangs of saws, is thus kept out of the river, and where it can be readily seen also, that, by the application of a further simple remedy, the whole of the sawdust would be carried off from the pitman, leaving none to fall into the water. Sawdust can be conveyed out of all sawmills in like manner (by means of properly constructed carriers) and as readily as grain and offal are conveyed from place to place in the ordinary grain mills of the country, and would be so disposed of if the owners of sawmills of every class, without fear, favor or distinction, are compelled to obey the restrictions relating to sawdust and mill refuse so wisely embodied in the statute laws of the country.

Attached hereto is a plan of the Little Lake at the town of Peterboro, on which is given the soundings, where unmistakeable evidence is furnished of the evil effects resulting from the unrestricted casting of sawdust and mill refuse into the river above where the saw mills are located. It is proposed also to obtain soundings of the river, from this Little Lake, down to where it enters Rice Lake. The deposits of sawdust and rubbish have become so great here, as to close up two of the three former outlets of the river into the lake, and the deposits are becoming so great of late, as to cause alarm for the early closing up of the third outlet, impeding navigation and preventing steamers going up the river to Peterboro.

Respectfully submitted,

SAMUEL WILMOT.

PLAN
OF
RIVER AND LAKE,
PETERBOROUGH.

Scale 10 Chains to an Inch.

NOTE Soundings taken 1st March 1886
Water 5-0" on Sill
Figures in Red denote depth Water
" " Black " " Sawdust.

Robt R Rogers
Supt Engr.
Trent Canal Works.

NOTE -
THE SAWDUST DEPOSITS ARE MUCH HIGHER DURING SUMMER THAN ARE SHOWN ON THIS PLAN. THE ANCHOR ICE FORCES NEW CHANNELS THROUGH SAWDUST AND MOVES IT FURTHER DOWN STREAM.

HARTMAN & CO. LITH OTTAWA ONT.

PART II.

REPORT

ON

FISH BREEDING OPERATIONS

IN THE

DOMINION OF CANADA

1889.

PRINTED BY ORDER OF PARLIAMENT.

OTTAWA:
PRINTED BY BROWN CHAMBERLIN, PRINTER TO THE QUEEN'S MOST EXCELLENT MAJESTY.
1890.

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REPORT

OF MR. S. WILMOT, SUPERINTENDENT OF FISH CULTURE FOR THE DOMINION OF CANADA, FOR THE YEAR 1889.

The Honorable Charles H. Tupper,
Minister of Marine and Fisheries,
Ottawa.

Sir,—I beg to submit the annual report on fish-breeding operations in the Dominion of Canada for the year 1889, in which will be given the particular transactions which relate to each of the hatcheries, especially as to the number of fish-eggs which have been laid down in each nursery, and the young fish of various species which have been bred and turned out of the several establishments during the past year; a summary of the work performed at, the wants required for, and the general standing of each nursery will be included.

There will also be found appended to this general report, the individual reports of the several officers in charge of their respective institutions in the several Provinces. In these, fuller details will be given, descriptive of the varied operations of capturing parent fish, hatching the ova, and distributing the several species of young fish in the waters of the various sections of the country.

The output of fry during the past year has been under that of former years, by reason of the reduced supplies of ova that were obtained in the season of 1888. Great success, however, has attended the collecting of eggs during the autumn just closed. The gross number amounting to upwards of 136,000,000, or an increase of some 37,000,000 over the previous year.

Taking the work as a whole the year's operations are of the most satisfactory character, and judging from the numerous applications which are being continually made by individuals, and public bodies throughout almost every section of the country, for fry bred at these nurseries to stock waters which are failing, or have become depleted of their former supplies of fish, but one conclusion can be arrived at, namely:—the growing popularity of the work of fish culture and the undoubted benefits which have been, and are to be derived from a judicious application of it as a supplementary aid to the natural method of producing from the waters of the country more plentiful supplies of fish-food for the inhabitants generally, and for enlarging commercial traffic in fish.

It may not be considered as inappropriate to briefly refer here, to the views entertained by two of the adjoining countries regarding the importance for extending in the one,—and introducing into the other, the work of fish culture, with a view to improve their former extensive, but now somewhat declining fisheries.

The Federal Government of the United States, and the Government of our own sister colony of Newfoundland are both making strenuous efforts to foster the fishing industry of their separate countries. The former by enlarging its fish cultural operations which have been already so successfully carried on by the United States Fish Commission at Washington, and its friendly co-operation with individual State Fish Commissioners for the erection of Federal Hatcheries and the taking over, and working some of the fish nurseries which were built by these individual States; thus relieving them from carrying on an industry which the Federal Government considers to be of such general benefit to the whole Union, that the expenditure in erecting these establishments and maintaining them should be borne from federal grants alone.

Newfoundland hitherto occupying the position of one of the leading fish countries of the world and desirous of maintaining that distinction in the future, has also just acknowledged fish culture to be a means by which to recuperate, and sustain her cod, and lobster fisheries.

The Government of that Island has secured the services of an expert in lobster breeding from Norway, Mr. Adolph Neilsen, who has already fitted up on Dildo Island, Trinity Bay, a fish hatchery of considerable magnitude for the propagation of codfish and lobsters; his success in breeding the latter during the past season has been very encouraging, and his convictions are that he will be enabled to turn out the coming season vast numbers of the young of the cod, and the lobster, to supplement the natural product of these valuable fish in the waters of Newfoundland.

In a further reference to the growing popularity of artificial fish culture in Canada, and in corroboration of the statement, it may be mentioned that applications are being made for enlarging some of the present hatcheries, and for building several additional fish nurseries:—The Fraser River hatchery in British Columbia, by the almost unanimous voice of the salmon canners there, who are a very important, wealthy, and influential class of persons, with one accord, give credit, in a great degree, for the enormous catch of salmon in the Fraser River the past season to the output of fry from that institution into the tributaries of that river. These practical men, all largely engaged in the fishing industry of British Columbia, almost without a dissenting voice, now earnestly ask that fish culture may be extended by the enlargement of the present hatchery, and for the construction of additional ones. A series of letters, under the signatures of these canners, expressing their views and faith in the results of artificial salmon culture on the Fraser River, will be found embodied in this report, and will repay a careful perusal by all persons who may feel interested in the maintenance of the fisheries of the country.

Manitoba and the North-West Territories, though but lately and sparsely settled, find that in some waters a decline is being felt already in the fish crop, and they now ask as a remedy to avert the disastrous results to their fisheries which have been so sadly experienced in the older settled Provinces, that artificial fish culture be introduced at once, and that one or more establishments be erected there to aid in maintaining the whitefish industry in Lakes Manitoba, Winnipeg, and other waters in the North-West.

In Prince Edward Island, where a salmon hatchery had been in operation for some time, but from an unforeseen accident by a freshet in the river, it became seriously damaged, and its operations have been stopped for the past two years. The inhabitants, noticing the benefits which have accrued from it in several streams, now apply for its renovation, and that it should be placed in a position for active work next season.

In the the city of Ottawa a fish hatchery has been fitted up, and will be in full operation during the approaching Session of Parliament, having a capacity to hatch several millions of young fish, of different species, annually. This nursery is on the lower flat of the present Fishery Exhibition building, and being at the seat of Government, will, no doubt, add materially to still further popularize the science by making this an educator on fish cultural matters for the numerous visitors coming to the Capital. In addition, this establishment will afford an opportunity to members of Parliament and others for obtaining, both ocular and practical, demonstrations of the *modus operandi* of propagating and rearing fish by the artificial methods.

GENERAL STATEMENT OF WORK PERFORMED AT THE SEVERAL HATCHERIES IN 1889.

The gross output of young fish of all kinds from the hatcheries in 1889 amounted to sixty-eight millions seven hundred thousand (68,700,000) and were of the following species, namely:

Atlantic salmon (*Salmo salar*)	7,254,500
Pacific salmon (saw-quai) (*Oncorhynchus nerka*)	4,419,000
Salmon trout (Great Lakes) (*Namaycush*)	5,140,000
Brook trout (speckled trout) (*Salmo fontinalis*)	206,500
Whitefish (Lake region) (*Coregonus albus*)	30,600,000
Pickerel, doré (Wall Eyed Pike) (*Lucioperema*)	21,000,000
Black bass (small mouth) (*Micropterus dolemei*)	80,000
Total	68,700,000

The following table will show the number of young fish, and semi-hatched eggs turned out from each of the hatcheries in the Dominion in 1889. The reports from the several officers in charge, are of the most satisfactory description, regarding the healthy state of the fry when planted in the waters; and of the soundness of the eyed-eggs which were obtained from the Ontario hatcheries, and deposited in the Quebec, New Brunswick, and Nova Scotia nurseries. The particular lakes, rivers, and streams and their localities in the several Provinces, will be found minutely described in the individual reports of the several officers in charge of hatcheries, in the appendices hereto attached:

SCHEDULE showing Number of **Fry** and Eyed-eggs turned out from each Hatchery in 1889.

Number.	Hatchery.	Province.	Fry put out.	Eyed-eggs sent to other Hatcheries.	Eyed-eggs received from other Hatcheries.	Species.
1	Fraser River	British Columbia	4,419,000			Salmon (*Nerka*).
2	Sydney	Nova Scotia	2,034,500			do (*Salar*).
3	Bedford	do	900,000			do do
	do	do	450,000		500,000	Salmon trout (*Namaycush*).
	do	do	2,500,000		3,000,000	Whitefish (*Coregonus*).
4	Dunk River	P. E. Island	Not in operation.			
5	St. John River	New Brunswick.	140,000		150,000	Salmon (*Salar*).
	do	do	830,000		1,000,000	Salmon trout (*Namaycush*).
	do	do	2,600,000		3,000,000	Whitefish (*Coregonus*).
6	Miramichi	do	850,000		50,000	Salmon (*Salar*).
7	Restigouche	Quebec	1,280,000	200,000		do do
8	Gaspé	do	450,000			do do
9	Tadoussac	do	1,600,000			do do
10	Magog	do	1,100,000		1,200,000	Salmon trout (*Namaycush*).
	do	do	1,700,000		2,000,000	Whitefish (*Coregonus*).
11	Newcastle	Ontario	2,760,000	2,700,000		Salmon trout (*Namaycush*).
	do	do	206,500			Brook trout (*Fontinalis*).
	do	do	2,800,000		3,000,000	Whitefish (*Coregonus*).
	do	do	80,000			Black bass (small mouth).
12	Sandwich	do	21,000,000	11,000,000		Whitefish (*Coregonus*).
	do	do	21,000,000			Pickerel, doré (*Lucioperca*)
	Total		68,700,000	13,900,000	13,900,000	

FISH EGGS COLLECTED AND LAID DOWN IN THE HATCHERIES IN 1889.

The following table will show the numbers and descriptions of ova collected and laid down in the hatching troughs and incubators of the several breeding establishments in the Dominion. No eggs were procured by the Magog and St. John River hatcheries in their own localities, but supplies of semi-hatched eggs will be transferred to the Magog establishment from Newcastle and Sandwich in Ontario; and to the St. John River nursery from the Ontario and Restigouche hatcheries. The total number of eggs collected for the year amounts to 136,122,000, and judging from the weekly reports which are regularly sent in by the officers in charge, the loss of eggs so far has been very small, and their present general appearance would indicate a satisfactory yield of fry for the coming season of 1890.

The following will give the eggs collected in 1889, the name of the hatchery and Province, and the species.

No.	Hatchery.	Province.	No. of Eggs.	Species.
1	Fraser River	British Columbia	9,233,000	Salmon (*Nerka*).
2	Sydney	Nova Scotia	2,540,000	do (*Salar*).
3	Bedford	do	2,300,000	do do
4	Dunk River	Prince Edward Island.		
5	St. John River	New Brunswick		
6	Miramichi	do	1,100,000	do do
7	Restigouche	Quebec	3,022,000	do do
8	Gaspé	do	820,000	do do
9	Tadoussac	do	2,557,000	do do
10	Magog	do		
11	Newcastle	Ontario	11,150,000	Salmon Trout (*Namaycush*)
	do	do	300,000	Brook Trout (*Fontinalis*).
	do	do	3,000,000	Whitefish (*Coregonus*).
	do	do	100,000	Black Bass (Small Mouth).
12	Sandwich	do	30,000,000	Pickerel, doré (*Lucioperca*).
	do	do	70,000,000	Whitefish (*Coregonus*)
13	Ottawa	do		
	Total Eggs, 1889		136,122,000	

NOTE—The St. John River, Magog and Ottawa hatcheries will be supplied with eggs later on from other nurseries.

GRAND TOTAL OF YOUNG FISH OF ALL KINDS WHICH HAVE BEEN TURNED OUT OF THE CANADIAN HATCHERIES FROM THE COMMENCEMENT OF FISH BREEDING AT EACH HATCHERY.

The following table will exhibit the gross out-put of fry of every description. Separate columns will give the names of the Provinces, and hatcheries, and quantities of fry bred at each nursery, and the year of the establishment, making in the whole a grand total of 705,544,900; consisting of Atlantic salmon, Pacific salmon, salmon trout of the Great Lakes, speckled trout of the rivers and streams, whitefish, lake pickerel or doré, and black bass.

STATEMENT showing the Places where, and the Years in which the several Fish Hatcheries have been erected; also the number of Fry distributed from each Establishment, annually, since they were built.

YEAR.	ONTARIO.		QUEBEC.				NEW BRUNSWICK.		NOVA SCOTIA.		PRINCE EDWARD ISLAND.	BRITISH COLUMBIA	TOTALS.
	Newcastle.	Sandwich.	Magog.	Tadoussac.	Gaspé.	Restigouche.	Miramichi.	St. John River.	Bedford.	Sydney.	Dunk River.	Fraser River.	
	Fry.	Fry.	Fry.	Fry.	Fry.	Fry.	Fry.	Fry.	Fry.	Fry.	Fry.	Fry.	Fry.
1868-1873	1,070,000												1,070,000
1874	350,000					100,000	60,000						510,000
1875	650,000			60,000	110,000	600,000	150,000						1,570,000
1876	700,000	8,000,000		150,000	50,000	300,000	60,000		395,000				9,655,000
1877	1,300,000	8,000,000		1,180,000	1,051,000	600,000	320,000		1,000,000				13,451,000
1878	2,605,000	20,000,000		707,000	650,000	1,015,000	665,000		1,400,000				27,042,000
1879	2,602,700	12,000,000		1,250,000	1,597,000	1,470,000	1,025,000		1,740,000				21,684,700
1880	1,923,000	13,500,000		1,155,000	730,000	1,500,000	805,000	170,600	730,000		500,000		21,013,600
1881	3,300,000	16,000,000	200,000	334,000	500,000	740,000	770,000	50,000	680,000		375,000		22,949,000
1882	4,841,000	44,000,000	975,000	600,000	530,000	1,400,000	640,000	588,000	850,000	315,000	1,060,000		55,799,000
1883	6,053,000	72,000,000	250,000	995,000	520,000	300,000	925,000	72,600	800,000	659,000	1,210,000		83,784,600
1884	8,800,000	37,000,000	100,000	985,000	859,000	940,000	795,000	811,000	1,000,000	853,000	1,000,000		53,143,000
1885	5,700,000	68,000,000	300,000	720,000	290,000	660,000	900,000	155,000	670,000	772,000	1,100,000	1,800,000	81,067,000
1886	6,451,000	57,000,000	1,400,000	1,627,000	576,000	1,380,000	945,000	2,181,000	960,000	1,179,000	400,000	2,625,000	76,724,000
1887	5,130,000	56,500,000	675,000	900,000	630,000	1,500,000	900,000	2,479,000	4,230,000	1,415,000	500,000	4,414,000	79,273,000
1888	8,076,000	56,000,000	3,475,000	850,000	800,000	1,720,000	1,290,000	4,142,000	4,390,000	1,559,000		5,807,000	88,109,000
1889	5,846,500	21,000,000	2,800,000	1,600,000	450,000	1,280,000	850,000	3,570,000	3,850,000	2,034,500		4,419,000	68,700,000
Totals	65,398,200	489,000,000	10,175,000	13,113,000	9,343,000	15,505,000	11,100,000	14,210,200	22,695,000	8,786,500	6,145,000	19,065,000	705,544,900

NOTE.—The particular descriptions of Fry above enumerated were as follows:—

Salmonidae—Atlantic and Pacific salmon, salmon trout of the Great Lakes, and speckled trout of the Streams	176,079,000
do Whitefish (*Coregonus*) of the Great Lake region	335,250,000
Percidae—Pickerel, or Doré (*Lucioperca*) and Black Bass	194,215,900
Grand Total of all kinds	705,544,900

PROPOSED CULTIVATION OF THE LOBSTER.

Regarding the contemplated action of your Department to erect one or more establishments for the artificial propagation of lobsters, I desire to state that, as lobster hatching has proved to be a successful undertaking in the United States and in Newfoundland, as well as in several of the European countries, there can be no reason whatever to doubt its applicability to the waters of the Maritime Provinces of Canada.

From the information obtained on this subject by correspondence with Colonel Macdonald, Commissioner of Fish and Fisheries for the United States, and with Mr. Neilson, Superintendent of Fish Culture for Newfoundland, there will be little difficulty experienced either in the erection of properly arranged lobster hatcheries or in carrying on the work, and turning out millions of young lobsters annually.

Our Maritime Provinces are, perhaps, in a position better calculated to make lobster hatching more successful than is found to be the case in the United States, from the fact of the parent lobster being yet found in many localities along the coasts quite numerously, and consequently giving greater facilities for securing almost unlimited supplies of eggs; and whilst this enterprise has been successful in the United States, in so far as the hatching of the young fish is concerned, yet a difficulty arises with that country in procuring adequate numbers of lobsters to supply them with eggs. I here quote Colonel Macdonald's words: "I am well satisfied, however, that if it were practicable in any locality to obtain all the fertilized eggs from the female lobsters which are taken for market, hatch them out and return them to the waters, the result of this work pursued systematically would make it possible to maintain the supply without imposing any unreasonable restrictions upon the catch. As a matter of fact, however, the exhaustion of the fisheries in the vicinity of Wood's Holl has gone so far that it is very difficult to obtain eggs in any number.

"We find no difficulty in hatching the eggs in any quantities that can be obtained, and with a very moderate percentage of loss. * * * The number of young lobsters hatched and planted last year in the vicinity of Vineyard Sound amounted to about a million and a-half. The apparatus used by us in lobster hatching is the automatic hatching jar employed in hatching shad and whitefish."

From the above it would appear that no difficulty presents itself to the artificial propagation of lobsters in Canada, and that the obstacle of not getting sufficient supplies of parent lobsters, referred to by Colonel Macdonald, would be overcome in the Maritime Provinces, as there are many localities where abundant supplies of the parent fish and their eggs could be readily got.

I also quote here a few paragraphs from Mr. Neilson's letters, who is engaged with the Newfoundland Government in lobster hatching. He came from Norway, where he was previously employed as an expert in lobster breeding. He says:

"A hatching station is built on Dildo Island, Trinity Bay, dimensions 75 x 45 x 20, with hatching room on first floor, dwelling above. A steam pump is used, capable of throwing 200 gallons of water per minute, and drawing the water from the sea at five fathoms depth, in order to procure water of great specific gravity, and keep an even temperature, which is of the utmost importance in hatching lobsters. * * The apparatus used here is the automotic jar; it does not work as well as the apparatus I used in Norway, but still I hatch out about 50 per cent. I collect all my eggs from the lobster factories, and thus save a large amount of eggs from destruction, and that otherwise would be cooked. The time of hatching from the eggs depends upon the state of the ova when taken from the parent lobster, and the temperature of the water. I prefer to take them when they will hatch in about three weeks. From the 19th July I have collected 2,600,000 lobster ova. * * * We collect our eggs in Placentia Bay and carry them across the country, which is troublesome; but we intend to put up a new hatchery in Placentia Bay."

From the above statements of Mr. Neilson, I should say that equal facilities are obtainable at many points in Nova Scotia, New Brunswick and Prince Edward Island for carrying on the work of lobster hatching successfully.

Again, I will quote from a letter of Prof. Gilbert V. Bourne, of the Marine Biological Association of Great Britain, who, in his concluding remarks, says:

"In conclusion, I would say that, in our opinion, the rearing of lobsters is perfectly possible, and that after the first installation it could be carried on at no great expense, and should the Government of Canada wish to know of a competent person to undertake the matter on their behalf, I could with the greatest confidence recommend one."

Prof. Bourne's views would indicate that, after building and furnishing an establishment with all necessary appliances, lobster breeding could be successfully carried on.

In Norway, where lobster hatching has been entered upon somewhat largely, Capt. G. M. Dannevig, an authority on the subject in that country, says:

"My opinion, as far as regards the coasts of Norway, where the lobster, practically speaking, is on the point of being exterminated, is that artificial hatching of all the eggs that can be had from the fishermen and exporters, and which of course are doomed to destruction, will prove to be of great benefit, but that the young ones at present, at least, must be liberated shortly after their birth, as their voracity leads them to kill and eat one another when crowded in the apparatus in large numbers."

It would therefore appear from all of the above practical statements, which are given by prominent persons actually engaged in the work of lobster culture, that there are no insuperable difficulties in the way of commmencing the enterprise in Canada, and that the present falling off of the lobster fisheries in parts of the Maritime Provinces calls for some effort to be put forth by your Department to stay, if possible, so great a calamity as the extinction of the lobster fisheries in those Provinces."

I beg to add here one more extract from Prof. Neilson's letters regarding his experiments. He says:—"I closed the hatchery the 12th November for this season (1889). Of 7,995,400 collected lobster ova, 3,956,400 were rejected, and 4,039,000 hatched and planted out in good condition. This gives me 50½ per cent., which I consider good, when considered that I collected all this ova from lobsters brought to the factories for canning purposes, and handled very roughly, too."

From the foregoing, lobster hatching can be readily carried on. Information on three important points in connection with the work will be asked, viz.:—Where to locate the hatcheries? and the cost of the necessary buildings and apparatus? and the maintenance of the establishments afterwards.

In reply to the first, as to location, I would say that it would be necessary to locate the establishments near to where an ample supply of parent lobsters could be readily got, for it would be almost useless to commence artificial breeding unless upon a very large scale, and an important point in the location must be that the sea water should be pure and strongly saline in quality, and of low temperature.

In the matter of cost of necessary buildings and apparatus, it will be extremely difficult for me to give a very clear estimate, but I should judge from the statement given by Col. Macdonald and Mr. Neilson that the building should be somewhat extensive in size and appliances, in order to carry on the work up to a standard of a producing power that would give ultimate success and satisfaction with the undertaking. In this view I would say that a building fitted up similar to the Sandwich hatchery, where the water is supplied by steam power, and the automatic glass incubators are used, would cost between $4,000 and $5,000. The average cost of the maintenance of the Sandwich hatchery during the past three years has been about $3,000 per annum—and I would conclude that a less sum than this could not be expected to run a lobster hatchery.

It may be asked, why not utilise some of the present fish hatcheries in the Lower Provinces, and combine salmon and lobster hatching together. This, I fear, could not be done, for the following reasons: Lobster hatching requires the purest saline water: salmon hatching the purest fresh water. The sea water for lobster breeding would necessarily have to be drawn from a depth of four or five fathoms, to give it the requisite purity, density and temperature. The water for salmon breeding is taken from running streams of fresh water. The location of a lobster establishment should,

of necessity to procure adequate supplies of eggs, be at or near some extensive lobster packing establishment, or where they could be taken in great numbers on the coast adjacent to the hatchery. None of the present salmon hatcheries are so situated.

In selecting a proper location, having the necessary conveniences for a lobster hatchery, another essential point must be held in view, namely: facilities for transporting the fry to other places where it may be found desirable to plant them. Nothing is said in any of the correspondence had with the authorities already referred to regarding the transport of the young lobsters, but I should conclude that with the facilities which are afforded by the lines of railways running along the coasts of the lower Provinces that no difficulty would arise on account of the safe carriage of the young lobsters to almost any point necessary for their distribution. When young salmon, salmon trout, and whitefish are transported hundreds of miles by railway and waggons without any appreciable losses, I would conclude that the same means could be applied for the safe carriage of the young lobster to almost any point if the location of the hatchery or hatcheries were in the first place made somewhat central.

In order, then, to make successful the enterprise of lobster hatching, locations as just described must be obtained, commodious buildings erected, and the best known apparatus placed in it, with the view that their capacity for producing should be counted by tens of millions, so that their output of fry should somewhat approximate to the natural production of these valuable crustaceans.

SAWDUST—ITS INJURIOUS EFFECTS UPON FISH-LIFE IN THE WATERS OF THE COUNTRY.

The specialty of artificial fish culture, to which the undersigned has closely applied himself for many years, has necessarily given him particular opportunities for observing from a practical standpoint fish-life in its varied forms, from the egg to the adult stage. The fish culturist from his calling, therefore, should be enabled to form a better idea than most others regarding the character, habits, nature and wants of fishes; and that which may be most beneficial for them at their critical periods of spawning, and the necessity also that exists for the river, stream and other waters where fish resort to spawn being kept as nearly as possible in their normal state, devoid of deleterious or polluted matter of all kinds.

The following conclusions regarding the destructive effects upon fish-life from mill-dams, and the casting of sawdust, mill refuse and other deleterious substances into waters frequented by fish (at their spawning times more especially), are based upon information derived, and facts personally obtained, during nearly half a century of close observations and practical knowledge in relation to the subject:

The poisonous effects of sawdust, when allowed to pass into rivers and streams, are so manifold and self-evident to the rational or practical observer that it would appear almost needless, in the present enlightened state of the world, to require any special pleas or arguments to convince even the most skeptical person of its disastrous workings upon all aquatic life, of an animal or vegetable character, found in the tidal, lacustrine or fluvial waters of any country. Wherever mill-dams have been built across streams, and where sawdust, mill rubbish and other deleterious substances have been cast into the water from saw-mills and other manufactories, fish-life and vegetation of all kinds have been greatly lessened, and in many instances wholly destroyed. This is particularly noticeable amongst the higher order of fishes,

ESPECIALLY THE SALMON FAMILY,

which are largely of a migratory nature, many of them ascending rivers and other streams for breeding purposes. These waters are usually of the purest, coldest and most limpid description, and therefore best adapted for the propagation of the

salmon species. These fish at the time of the first settlements of Canada were found frequenting almost every river and stream emptying into the sea, and the great lakes also. So plentiful were they in many of our waters, before the lumbering industry took such a strong hold in the erection of dams and saw-mills, with the consequent injurious effects from them upon fish-life, that fish of all kinds were in great abundance. They were freely used by the inhabitants generally for domestic purposes, and also produced a large amount of traffic and commercial wealth for the country. But as the saw-mills and mill-dams increased in numbers with greater capacity for their work, the mill-dams formed impassable barriers to the ascent of salmon and other fishes to their natural spawning grounds above—and then the hurtful and pernicious effects arising from the sawdust and mill rubbish being constantly cast into the streams poisoned the spawning beds below, and stayed the growth of all vegetation, thus driving away insect life, which is the principal sustenance for fish in their younger stages of existence. As this improvident work of the mills increased in magnitude, so did the yield of all kinds of fish decrease in these waters until it has been found in some cases that, after stripping the neighborhoods of all lumbering material and

DESTROYING ALL FISH-LIFE,

these mills have gone into ruin and decay, leaving sorrowful mementos only of their destructive workings in the waters of the country for the inhabitants who follow after. It is, therefore, of the greatest importance that any law which provides "that sawdust or mill rubbish shall not be drifted or thrown into any streams or other waters frequented by fish," should be maintained and strictly enforced wherever the continuance of fish life is held to be of any benefit to the people. By a strict and impartial application of a law for regulating mill-dams for the easy ascent of salmon, shad and all other migratory fishes to their proper spawning grounds; by the enforcement of any statute forbidding sawdust, mill rubbish and other deleterious substances being drifted or thrown into the streams and other waters; by the due observance of a proper close time; by a stoppage of the deadly torch and spear, and the accursed use of dynamite for killing fish; by judicious regulations regarding the use and setting of nets of all kinds, and by increasing the supplementary aid to be obtained from artificial culture, it is believed that only a few years would pass before an increase would be experienced in the catch of salmon and all other fishes throughout the whole extent of the Dominion. There are yet to be found sufficient numbers of fish, natives of the rivers and other waters, left, from which, by proper protection and good husbandry, an immense supply of fish food and commercial wealth would be readily obtained for the general benefit of the inhabitants of the several sections of the country. Sawdust, as previously stated, is manifold in its range of destruction when allowed to be cast into waters to which fish are indigenous, or where animal or vegetable life is to be sustained. It is an artificial product, alien to and engendering latent diseases of various kinds, with fatal results in all waters where fish life exists. Its introduction into streams and other waters through the improvident agency of mankind has so changed their purity and fouled their beds as to

RUINOUSLY OPERATE AGAINST

the many natural requirements indispensably necessary for the production and growth of the better descriptions of fish. Sawdust in its locomotion, when drifted from mills, becomes water soaked, and settles upon the gravel beds and other places where fish resort for depositing their eggs. These coming in contact with this extraneous matter become infected; impregnation is prevented, vitality is destroyed, and they die. Should the ova escape contact with the sawdust or the foul matter from it during the earlier stages of incubation the same direful effects will be brought about later on, in the embryo state, and also when hatched into fry. In this last-mentioned stage death is almost certain, from the total absence of vegetable growth, the nuclei for insectivora, crustacea, and other insect tribes upon which the young

fish largely exist in early life. Sawdust, from its resinous nature, becomes almost indestructible, even on land or in the water, and wherever it takes lodgment to any extent, must sooner or later destroy all animal or vegetable life. In certain cases it becomes intermixed with sedimentary matter and alluvial deposits, when partial decomposition sets in, and gaseous explosions of a fœtid and noxious character are thrown up over large areas, and with such violence as to cause upheavals of this putrid matter through ice and water surfaces hundreds of yards in extent; and in some rivers these explosions are found to be extremely dangerous to life, property and navigation.

A NOTABLE CASE IN POINT

is the Ottawa River. In order to comprehend the desolating influences of sawdust and mill rubbish even on the land, an inspection of one of the many mill yards, where acres in extent are covered with this refuse at establishments now in operation, as well as at places where the mills have long since gone to ruin and decay, and the spectacle presented to the eye is but a barren, death-like waste of all vegetation; not a blade of grass, nor an evidence of any growth whatever is to be found on these deposits of sawdust. Here, if nature's laws for giving growth to all things could have been carried out, something having life, or showing vitality in some manner, would be produced during long years. But no; it is still an inanimate mass of rubbish stricken with death, annihilated for growing anything. Who, then, would cover his garden, or his lands with this non-producing, desolating substance, in the expectation that vegetation would come forth, or that animal life of any kind could be sustained from it? The ruinous effects of this sawdust scourge when deposited in the waters of the country are still greater than when cast upon the land. Its floatability at first gives it more widespread areas in which to work out its blasting influences; even passing down in some instances till it reaches the estuaries of streams and the small inlets and bays along the coasts of the sea and shores of lakes. Here, it likewise

KILLS THE SOURCES WHICH GIVE LIFE.

and food for the smaller races of insects and other marine animals, whose absence from these secluded nurseries of fish-life turns away from the adjacent shores the more important commercial fishes that formerly resorted to these places for prey. Settling here and there in its course down the streams, it forms a compact mass of pollution all along the bottoms and margins of the rivers and inlets, filling up the crevices on the gravel beds, and among stones, where aquatic life is invariable produced and fed. It becomes a fixed, imperishable foreign matter, and adheres to the beds of streams and other waters, and forms a long, continuous mantle of death. and constitutes an endless graveyard to the innumerable colonies of insect life which inhabited these former well-adapted natural abodes for their existence, These, then, are only some of the pestilential effects produced by sawdust and mill rubbish in the waters of the country on fish-life; and independant of its evil influences, from a sanitary point of view on human life and its damaging effects by seriously impeding navigation on many waters. Then why should the few, for self-aggrandisement only, be permitted to continue this

WICKED DEVASTATING WORK.

for depleting the waters of their legitimate supplies of food, originally providid by an All-wise Providence for the use of mankind? And why should the many suffer for the few who still pursue and unscrupulously advocate a continuance of this insidious and direful proceeding for entailing ruin upon the fisheries of our country?

The following extracts, taken from official reports and other public documents, relative to the evil effects of sawdust, mill refuse and mill-dams upon fish-life, are hereto given in corroboration of the foregoing remarks:—

Extract from a report prepared for the Vienna Exposition, on the decrease of Food Fishes:

"The basis on which a rational system of pisciculture is founded is very simple, and can be limited to the following rules:

"Preserve the natural condition of those places where the fish spawn, conditions which favor the spawning process and tend to preserve the spawn and protect the first development of the eggs; thus, everything which diminishes the supply of fresh water; everything which changes the quality of the water or the character of the bottom; everything which hinders the growth of aquatic plants; in fact, everything which, at its very source, can destroy the health of fish of a whole basin. * * * Leave a free passage for the fish to pass to the places which are favorable for spawning. * * * Protect the young generation, so that it can arrive at the age of maturity and contribute its share towards the increase of its species."—*U. S. F. R.*, 1874.

Prof. J. W. Milner, of the United States Fish Commission, in reporting on pollution of lake waters from sawdust, said:

"The refuse from the saw-mills, slabs, sidings and sawdust is thrown into the streams in immense quantities, to float out and sink into the lake. It is having a very injurious effect upon the fisheries. The water-logged slabs, tilted on the bottom and moved by currents, tear and carry away the nets. The sawdust covers the feeding and breeding grounds of the fish, and is so obnoxious to them that, in the vicinity of numerous mills, the fisheries become greatly reduced in numbers and success.

"Observations have discovered the salmon ova, diseased and decaying, with particles of sawdust adhering. Its contaminating effects extend far and wide from the vicinity of the mills, as the contents of a dredge, from one hundred fathoms depth, in Grand Taverse Bay, contained numerous blackened and decaying particles of sawdust.

"The gradual deposit of water-logged sawdust, an inert substance in the water, with occasional slabs, forms nuclei for sand-bars in the mouths of the rivers, and in some of them will contribute to an injury to navigation, as it has to a considerable extent in rivers of Wisconsin and Michigan.

"In the Sault Ste. Marie River, and in the Detroit River, in the fall of the year whitefish congregate in great numbers for the purpose of spawning. In a number of rivers the whitefish was formerly taken in abundance in the spawning season; saw-mills are numerous on all of these streams at the present day, and the great quantity of sawdust in the streams is offensive to the fish, and has caused them to abandon them.

"As everywhere civilized man disturbs the balance of nature, and becomes the great enemy of all forms of life that do not conform to his artificial methods for their protection. Not only by the hundreds of artifices for the capture of the fish, but in the foul drainage from the cities, and manufactories, and in quantities of sawdust from the mills, they are driven from their favorite haunts and spawning grounds, and their food destroyed by waters tainted with fatal chemical combinations."

In the seventh report of the Fish Commissioner for the State of Michigan, 1886, when alluding to fouling of the waters with sawdust, &c., it is stated:

"There are some places, nevertheless, where the practice of running sawdust and edgings into the water has become not only an intolerable nuisance from a sanitary point of view, but a great annoyance to navigators of steam craft, and utterly destructive of fishing grounds which, before, were the natural spawning resorts of the whitefish. Particularly is this state of facts true in several places on the north shore of Lake Michigan, and Muskegon, and other places on the east shore of the same lake. The surface of the water for miles around each of the places named is covered with this stuff, and both vessel men and fishermen report that the natural formation of the bottom has been completely covered by the rotting sawdust deposited there. This unnecessary destruction of the feeding and spawning grounds of the fish should have been prevented long ago, but even at this late day there is

no good reason why early legislative action should not intervene to prevent the few mill men who still persist in this practice from so using the waters of the great lakes and the streams emptying therein as to subvert the rights of every other class."

In the New Hampshire Fishery Commissioner's Report, 1885, the following passage occurs :—

"Another method of securing an increase of fish consists in taking the necessary measures to prevent the introduction of foul waste, such as will kill or injure the adult fish, or young, or interfere with the development of the eggs, such as paper and dying establishments, &c., &c., and refuse of saw-mills, the sawdust getting into the gills of the parent fish, or covering up the spawing beds. Many a fine stream has been ruined by saw-mills which have allowed the sawdust to pollute the water. Dams near the mouth of a stream often obstruct the water, so that fish cannot reach a suitable place to deposit fertilized eggs. At the end of two or three years there will be a continued lessening of the run of fish. At the end of this time, when all of the fish born in that stream have been caught, or destroyed, the run ceases. Although the obstruction be removed the stream will remain barren of fish until restocked by human agencies."

Extract from the Michigan State Laws, Section 10 :—

"No person shall put in any of the waters bordering land where fish are taken by the legal owners, or occupants thereof, any ship's ballast, stone, sand, ashes, slabs, sawdust or filth of any other description * * * shall be subject to a fine not exceeding $50."

Extract from a report of Chief Inspector of Fisheries to the Imperial Board of Trade :—

"The ascent of salmon in the rivers is considerably impeded by a number of small weirs, many of which have been built or raised since 1861, and are without the required fish-pass. I have drawn the attention of the Fishery Board to these cases, and also to the introduction of sawdust into the rivers, which is deadly to fish from its choking their gills, and of the refuse from slate grinding, which fills up the spawning beds."

The National Fish Cultural Association Journal, April, 1887, states :—

"Another impediment to the rapid accomplishment of the desired result (for increasing the supply of valuable fishes, and other aquatic forms,), is the absence of concurrent protective legislation of a sufficiently stringent character to prevent unnecessary waste of the fish during the critical period of spawning; and the erection and maintenance of impediments to their movements in reaching the spawning grounds. This is especially the case with the shad and the salmon."

Extract from report of Fish and Game Commissioner for the State of New Hampshire, U.S.A., for 1889 :—

"The Commissioners call the attention of the Governor and Council to the great injury done to many of our trout streams by sawdust and mill refuse being dumped into the streams. A great deal of this is done by portable steam mills that move from place to place, and generally locate so as to run the refuse into the stream to avoid the trouble of taking care of it. The extent of this evil will be understood when we consider that for every thousand feet of lumber sawed forty bushels of sawdust go into the stream. The greatest injury to our streams by mill refuse is the distruction of the spawning beds and young fry. The clear, gravelly eddies just below rapids are the places that are selected by the fish for spawning

purposes, and unfortunately these are the places in which the sawdust accumulates, and the bottom is no longer clear sand andgravel, but a foul mass of decomposing vegetable matter, capable, if present in large quantities, of generating heat enough to emit gas."

Another extract is here given from the report of the Fish Commissioners for the State of Michigan for 1887-88 :—

"At Manistee, Seedington, Muskegon, Grand Haven, Pentwater and Montague, while whitefish are scarce in consequence of the depositing of refuse from saw-mills, yet the fishermen believe in artificial propagation, and that planting would be a success if the water was free from that refuse."

Extract from a letter of the late Professor Baird, United States Fishery Commissioner to the Commissioner of Fisheries of the State of Maine :—

"My opinion is asked as to the probable cause of the rapid diminution of the supply of food fishes on the coast of New England, and especially of Maine. The fact as stated needs no question: it is too patent to the experience of every man who has been interested in the fisheries, whether as a matter of business, or as an amateur. An examination of the early records of the country, in which the subject is referred to, cannot fail to convince even the most skeptical.

"We are all very well aware that fifty or more years ago the streams and rivers of New England emptying into the ocean were crowded, and almost blockaded at certain seasons, by the numbers of shad, salmon and alewives seeking to ascend for the purpose of depositing their spawn, and that even after these parent fish had returned to the ocean their progeny swarmed to an almost inconceivable extent in the same localities, and later in the year descended to the sea in immense shoals. It was during this period that the deep-sea fisheries of the coast were also of great value and extent. Cod, halibut, haddock, and the line fish generally, occupied the fishing grounds close to the shore, and could be caught from small open boats—ample fares being readily taken within short distances of the fishermen's abodes, without the necessity of resorting to distant seas. Now, however, the state of things is entirely different. The erection of impassable dams upon the waters of the New England States, and especially of the State of Maine, has prevented the upward course of the anadromous fishes referred to, and their numbers have dwindled away, until at present they are almost unknown in many otherwise most favorable localities. The fact has been observed, too, that with the decrease of these fish there has been a corresponding diminution in the numbers of cod, and other deep sea fishes near our coast; but it was not until quite recently that the relationship between two series of phenomena were appreciated as those of cause and effect."

The following is copied from the annual report of the Commissioners of Fisheries and Game of the State of Maine for 1886, viz.:—

"It is a fact that the State of Maine has the most rigid and best enforced code of laws for the protection of game and game fish of any State in the Union.

"Moosehead Lake is evidently to be the grand fish pond of the Union. * * * The waters are forever protected by law from such deposits of mills or factories as would drive away the fish.

"The diminished volume of water in our rivers, caused by the demands of our industries, and ravages of fire, the obstruction of our watercourses by milling enterprises, the throwing into our our streams of sawdust and waste of our sawmills, the poisonous washings from our various factories, all have tended to destroy our fishes. * * * A great portion of the spawning grounds of our salmon has been destroyed by being covered with sawdust and waste from our thousands of manufactories, compelling our migratory fishes to seek other spawning beds, or leave their ova to be poisoned, or its young to be starved.

"The future of Maine is artificial hatching and planting, or the entire extinction of salmon in our rivers. For the last decade the work of the Commission, in yearly planting young salmon fry in the Penobscot, has alone preserved the salmon to our

river. Had the Commission not yearly supplied hundreds of thousands of young salmon to stock the great rivers of Maine the salmon would now be a thing of the past and extinct."

EXTRACT FROM THE REPORT OF THE SELECT COMMITTEE OF THE SENATE OF CANADA, FOR ENQUIRING INTO THE EXPEDIENCY FOR PREVENTING SAWDUST AND OTHER REFUSE BEING CAST IN THE OTTAWA RIVER.

(ABBREVIATED.)

"Your Committee are of opinion that it is established beyond question, that extensive deposits of sawdust and other mill refuse exists in the river * * *, and that these constitute a very serious and steadily increasing interference with public rights of navigation, which has already become seriously obstructed, and must at no distant period, if immediate measures are not taken to arrest the evil, become irretrievably destroyed. That sawdust, and other refuse of sawmills, can be economically utilized, and that, the destruction thereof is successfully accomplished in at least one mill on the Ottawa, and in many others in Canada, and in the United States of America. * * * That these large deposits of decaying vegetable matter constitute at times a dangerous menance, if not a positive injury to health."

"Your Committee accordingly recommend that the provisions of the Act (Chap. 91, R. S. C.) 'To prevent sawdust or sawmill rubbish from being thrown into navigable waters' be stringently enforced."

The following are abridgments of the evidence given before the above named commission, showing the destructive effects of sawdust and mill rubbish, when thrown into rivers:—

1. *Jno. R. Arnoldi*, Chief Mechanical Engineer of Public Works, said:—

"Before retiring I want to put in something, as one of the most important facts against the sawdust nuisance that has yet been brought to notice. I live right over the cliff, and can see the barges, and cribs, and sawdust coming down the river. The most serious thing is the danger arising from sawdust deposits. These piles of sawdust in the bottom of the river generate a gas which produces explosions by which the steamer 'Peerless' might be broken to atoms. I have seen three explosions a week in front of my house; I have seen a barge thrown clear up on top of the water by one of these explosions. One explosion blew up about two acres of solid ice a couple of feet thick—the broken ice froze together again, and within a week or ten days it blew up again in the same place. This was right in the track of the steamer when coming in with passengers. The obstruction of the river is a commercial loss, but the danger of life is still more serious."

2. *Henry A. Gray*, Assistant Chief Engineer, said:—

"It is no common occurrence for explosions to take place in the gas generated from sawdust. In January last an explosion took place opposite the Rideau River, and broke up the ice, bringing from the bottom of the river a large amount of mill refuse. Another explosion took place and ice 14 inches thick, covering an area of 1,500 feet, was thrown up and broken into small pieces. Decomposing sawdust will not float; it sinks; it never rots. The smell is very obnoxious, and injurious to health. The sickening smell made me ill and also some of the men. At Spanish River, Byng Inlet, the men after going there took typhoid fever, which the doctors said was attributable to the gases arising from the decomposed sawdust. I have no doubt if the steamer 'Peerless' was passing over at the time of one of these explosions it would destroy her."

3. *Robert Surtees*, C.E., of Ottawa, said:—

"We have had difficulty in connection with the recent epidemic of typhoid fever, and the analysts all agree that it came from pollution of the water by organic matter, bark, sawdust and sewage. About twenty-eight years ago there was good

ishing in the river; about five years ago I fished and did not get any then. I used often to get a dozen in the evening before. The sawdust could be burnt as it comes rom the mills without incurring vast expense. Three mills now make steam with he sawdust. An explosion occurred one night and blew up 50 or 60 square eet of the ice, right on the road. If any teams had been there they would have een lost."

4. *William P. Lett*, City Clerk of Ottawa, said:—

"I used to fish in the river in my early days and it was one of the best rivers or fish that I know of. Every eddy was full of fish. The fish was a matter of some mportance, though they are of little consideration now. There was no salmon, but here were pickerel pike, black bass, and a great many mascalonge. I could catch ny number of fish I wanted; now you might fish a week and would not catch two. The bottom of the river is covered with sawdust, and the pickerel, which is a ground ish, could not remain; it has disappeared; it must have sand, earth or gravel. There were fifty thousand people besides the children, and the fish they caught and were benefited by were worth $2.00 each adult, for the year, over and above what it s now, when the river was in good condition. This is a loss of $100,000 a year lone, although it is the smallest consideration in this matter."

5. *A. L. Dunning*, of Ottawa, being examined, said:—

"I have been backward and forwards here for forty years. In those days there vas no sawdust to be seen, the shores were perfectly clear, the bays were clean, and here was any depth of water, where now they are filled with sawdust. There were ots of fish in those days, any quantity of them, but not so many now; they are a ood deal scarcer."

6. *Dr. Robillard*, of Ottawa, was examined, and said:—

"I have lived here fifty years; the river, when I first knew it, was a free, unobtructed stream, where game and fish used to abound. There was no accumulation f sawdust at that time; the bays and creeks were free from sawdust and mill efuse. The condition now is, that it is obstructed by sawdust, and mill refuse from he mills, all along the coves, and creeks; portions of the river are choked up altoether. I am quite aware of the fact that the river is much obstructed by sawdust, nd is a great injury to navigation, and may be an injury to the health of parties on he lower parts of the river. There is no doubt that it is the principal cause for the isappearance of fish from the Ottawa River."

7. *T. C. Keefer, C.E.*, Ottawa, examined, says:—

"I have resided here since 1864. The shores were then entirely clean, rock, and, and gravel, and the beach sandy and gravelly. The water was all depths, eginning at the shore, it went out to 40 feet. Ten years ago I examined it, and here was a deposit of several acres of sawdust, and the outer edge of it was steeper han an ordinary sand-bank and 40 feet in depth. There are acres and acres of rotten mass of sawdust. In the early days fish were very plentiful; I do not think ny respectable fish would come up here now; the shad used to come in my early ays to within eighteen miles of Ottawa. I know that fish are very scarce—we canot get any now."

7. *John Stewart*, of Ottawa, being examined, said:—

"Sawdust covers the spawning beds of fish, and it gets into the gills of the fish, nd of course they will not come up the river. The gas that comes from it is the ame as that which comes from the swamps of ague malarial districts; it is also xplosive. I do not think that the majority of lumbermen are against the utilisation f sawdust; the thing is to get them all harmonious, of one mind."

8. *Hon. Mr. Dever*, examined, said:—

"I found at the harbor of St. John, N.B., and on the river also, that numerous ills of the same kind as at Ottawa throw their sawdust and mill refuse into the ver and harbor. The practice was so injurious to the waters of the harbor,

destroying the fish, &c., that we deemed it necessary to prevent it, and we did prevent it by by-law. They have also to dispose of their slabs, and bark, and refuse of all kinds. They burn it; in our primitive state this was not done, but we were compelled to prevent it because our harbor and fish pools would have been filled up with this decomposing matter. It became ruinous to the fish, destroying their spawning grounds and lessening the supply of fish generally."

9. *John Mather*, engaged in lumbering at Keewatin, was examined, and said:

"I am engaged in water and steam mills, principally water mills; at Keewatin we do not let any sawdust in; that is a water mill; we keep all sawdust out; we catch it as it falls and take it out with carriers and then cart it away. The mills are driven with waterwheels and belts on the wheels; it is the same action as the steam mills."

10. *Hon. Senator Glasier*, examined, said:—

"There are seven or eight mills at the St. John, N.B., harbor, all steam mills; they burn all their sawdust and a large portion of slabs. They have worked thirty and forty years with no accidents from fire, though they are in the middle of the place. Right in the city of Fredericton, on the St. John River, there is a mill which has been running for twenty years, and they burn their sawdust; there are other mills along the river; they all cart their sawdust and refuse out and burn it. The only mill on the river that does not consume its sawdust and refuse is Gibsons. By arrangement with the Government he is allowed to put his sawdust in the river, but he burns his slabs right alongside his mill. A channel has been dug through the sawdust half a mile long and 10 feet deep; sawdust is ruining the fish in the river.

"The salmon have decreased where the sawmills are located. The streams are comparatively ruined for fishing. The Nashwauk River, where Gibson's mill is situated, used to be a good salmon river, but they are now completely gone. The salmon used to spawn there; I have taken seventy in a day right on the shore, below Fredericton. The shad, the gaspereaux and the salmon and sturgeon were then in large quantities; now they are diminished very greatly. The salmon that we now get are mostly from the north shore, Baie des Chaleurs and Miramichi. A considerable number of salmon are still in the St. John harbor and around the bays. The obstruction to the river is a very serious thing, and if Gibson is allowed to put sawdust and refuse in the river a few years longer without check it will be worse. I have been in the lumber business sixty years, on the River St. John and its tributaries."

From the "American Angler and Hook and Line":—

* * * "In considering this question as briefly as possible, it is quite superfluous to enquire to what family or particular genus river fish belong. All fresh water river fish demand similar conditions of the water upon the spawning beds for the vivification of the spawn, the health of the ova and the prosperity of the fry. It is known to be essential that the milt and spawn admix in a clear state, and that if any acid or gas should come in contact with spawn and be absorbed at this critical stage, the result would be disastrous, and simply cured by experience. The absorption of oxygen is necessary for the development of the embryo, and should this be contaminated by other acids or soluble gas than the natural hydrogen found in pure water death is inevitable.

"Now it is known that sawdust, being greatly composed of coniferous woods, combines with its resinous properties chemical agents capable, under certain conditions of heat, of generating deadly quantities of carbonic acid gas, humic acid and others, all of which are factors in the destruction of fish life. If sawdust is advantageous to the healthy state of the ova, why do not those favoring it employ sawdust, instead of carefully boiled gravel in the tanks of their hatching houses? It is quite impossible that in waters where sawdust accumulates, or even passes in its descent over the beds, that the ova are not corrupted, or that algæ or rust will not

settle upon them, and it is too well known that one dead egg will soon contaminate others in its vicinity. * * * *

"But why is it that all fish seek running water, if it is not from a natural instinct to get oxygenated waters, untainted by anything like muric acid or like gases? To say that salmon seek clear water, and yet are not inconvenienced by waters wherein decayed vegetable matter gains admission, is a contradiction. But again, the aromatic odor emenating from coniferous wood is sufficient to decide fish to vacate its vicinity, even if it could furnish an unperceptible quantity of food. There is certainly no reason to conclude that fish do not die from sawdust because their dead bodies are not found, because the fact is they die before maturity, and that it is the ova and the fry which suffer, not the adult.

"Is the heat occasioned by the fermentation of decaying sawdust not calculated to render noxious any water where this may take place? As to sawdust not collecting upon spawning beds, that idea is exploded, for it cannot be contradicted that waterlogged sawdust becomes little less heavier than light gravel, or sand, its specific gravity little less, and that it can accumulate in quite appreciable quantities in every small depression or inequality of the bottom of a stream whose speed attains four miles an hour. To say that fish can escape from taking through their mouths certain quantities of sawdust is equally absurd, for they do, and cannot help it. Hence we must suppose they must suffer by this fact alone. That vegetable matter in a state of decay, as given out from the sawmills, is not beneficial to fish, but on the other hand entirely adverse to their propagation, with all respect to those holding opposite views we cannot conclude otherwise."—*G.B.*

SAWDUST IN COLORADO.

"The sawmills of Colorado, as a general rule, cut pine lumber, and anyone who has seen a bank of pine sawdust extending into a stream has noticed, if he has been in the least observing, the turpentine and resinous oils exuding from the sawdust and spreading abroad upon the surface of the water in all the gaudy colours of the rainbow. The deep pools in such a stream for miles below, instead of offering to its finny inhabitants healthful bottoms of sand and gravel, are cased and lined with sawdust. In Colorado sawdust kills and drives out fish. The experience of thirty years has taught the people this, not as as a theory, but as a fact."—*Sports Afield.*

SAWDUST ON LAHAVE RIVER, NOVA SCOTIA.

EXTRACT from a Report made by Mr. S. Wilmot to the Department of Fisheries in 1884, regarding Sawmills and Sawdust on the Lahave River.

"It is advanced by the mill-owners and other parties interested with them that should they be restricted from allowing the sawdust made at their mills to pass into the river they would be obliged to shut down their mills, and thus stop a large industry in the country. These, to my mind, fallacious and irrational statements, need only to be considered and investigated by the reasonable and dispassionate mind to show how futile is the plea, and why it is put forth for self-aggrandisement only, whilst the public generally are the sufferers. Not only in the fishing industry of the country is it found that many valuable fish-producing waters have been almost wholly deprived of fish-life from the noxious and wide-spreading evil influences produced from sawdust deposits, but also in many instances navigation has become seriously impeded by the operations of this too long practised habit which is forbidden in the statute books of this and almost every other civilized country where the safety of the fishing and navigable interests are considered worthy of legislative protection.

"One of the largest water mills with a double gang of saws is situated on the estuary waters of the Lahave River below Bridgewater. It is driven by water power alone; it has been running for about six months in the year during the past thirteen years. The river is navigable for vessels to come to the mill for the lumber made in it. But no sawdust is cast into the water; it is all carried into a ravine a short distance from the mill, the owners preferring to do this, which they admit entails

but little expense, rather than throw it into the water, where it would obstruct the passage of vessels coming to the mill to carry the lumber away. Now, here is a case which, taken from a navigable point of view, shows clearly the interest of the mill owner for his own preservation in the course he should pursue for economically carrying on his milling business, and not injuring the navigation of the river by depositing the sawdust in it. The whole of the sawdust and mill rubbish here is caught as it falls from the large gang-saws, by a simple and cheap appliance of carriers, and dumped into carts and conveyed to the ravine; here, during thirteen years or rather six and a half years of the actual working of this mill, a mountain of sawdust has been found covering a surface area of about six acres, with an average depth of about 40 feet; one side of the ravine, from information obtained from the manager of the mill, was originally about 60 feet deep, the other side about 20, giving an average depth of 40 feet; it is therefore mere matter of calculation to show the extent of river bottom this vast quantity of sawdust would cover, and the injury that would necessarily result to the navigation of the river, independent of the fully greater calamity to be produced on fish-life from the noxious gasses arising from it by its partial decomposition on the bed of the river.

"This mill is the only one of the many on the Lahave River that does not allow this refuse matter to pass into the streams; and it is a deplorable fact that nearly every mill owner throughout Nova Scotia pursues the pernicious course of putting sawdust into the streams, rather than otherwise disposing of it. In the one case referred to, it is got rid of for self-interest, to prevent blocking the passage of vessels to the mill for carrying the lumber away. In the other cases it is disposed of likewise from selfish motives, by allowing it to pass into the streams without labor or expense, to the detriment of every other interest of the inhabitants below them.

"It may then be asked, how is it that this one very extensive saw-mill on the Lahave River, manufacturing, as it does, ten and twenty times more lumber than many of the other mills on the same river, finds no difficulty in catching and carrying its sawdust away on the land for convenience and financial benefits in the transaction of its large business, while the other mill-owners, from other interested motives, and to hoodwink and deceive the fishery authorities and the public, declare that if compelled to carry out the law by 'not allowing their sawdust or mill refuse to be cast into the streams,' they would have to close their mills, which would seriously affect the lumber trade of the country. The great wonder is, that the public and fishery authorities should have so long countenanced the violation of the law which 'forbids sawdust and mill refuse being cast into streams frequented by fish.'

"With every saw-mill examined, and they have been very numerous, I have not yet found a single case where the sawdust, by a little ingenuity, and with small expense, could not be readily caught when falling from the saws and carried away, in like manner as at this large gang-mill on the Lahave River. But so long as the mill owners are permitted to cast sawdust and mill refuse into the streams, contrary to the provisions of the law, and with the sanction of the fishery officers, just so long will this destructive agency to fish-life be continued, and the prospects for maintaining the fisheries of the country be overthrown and eventually ruined."

Extract from Report made to the Department of Fisheries, regarding sawdust and mill refuse in the Otonabee River, Ontario, by Mr. S. Wilmot, 1889.

"That the statements put forth by the mill-owners on the Otonabee River 'That all sawdust and mill refuse which they can reasonably be supposed to keep out of the river is kept out; and that their mills are so constructed as to render it impossible to entirely prevent sawdust from falling into the river; and that to enforce the provisions of the 'Fisheries and Navigable Streams Acts' would result in a stoppage of their work, and the throwing out of employment of some six hundred men.'

"The above statements are not only incorrect, but also untenable, from the simple fact that two out of the four of these mill-owners are, at the present time, by

a simple and comparatively inexpensive appliance in their mills, preventing sawdust from going into the river; and this same remedial measure is equally applicable to the other mills worked on this river, or in fact anywhere else in the country.

"That any concessions made to sawmill owners by which they may be allowed to let all sawdust, made from gang or other saws, pass through the pitman holes into the river, is tantamount to exempting that mill from the operations of the 'Fisheries and Navigable Streams Act,' relating to sawdust, &c., for in the manufacturing of ordinary lumber from ordinary logs it is held that about one-fifth of the log is made into sawdust, and that fully seven-eights (or it may be said all) of the sawdust will necessarily drop through the pitman holes into the water below unless otherwise prevented.

"That all sawdust can, by the exercise of some small ingenuity, and by the application of comparatively inexpensive machinery, be conveyed out of nearly every sawmill in the country, when it can be dumped into fire pits, to be consumed, or otherwise disposed of.

"This is practically illustrated in a very great measure at the upper mills on the Otonabee River, where nearly the whole of the sawdust from the large gangs of saws is kept out of the river, and where it can also be easily seen that, by some further simple appliance, the whole of the sawdust could be carried from the pitman holes, leaving none whatever to drop into the river. Sawdust can be conveyed out of all sawmills in like manner, by means of properly constructed carriers, quite as readily as grain and offal are carried from place to place throughout the ordinary grain mills of the country, and would be so disposed of, if the owners of all saw-mills of every class were compelled without fear, favor, or distinction, to obey the restrictions relating to sawdust and mill refuse, so wisely embodied in the 'Fisheries and Navigable Rivers Acts' of the Statutes of Canada."

SUMMARY OF OPERATIONS AT EACH OF THE HATCHERIES IN THE DOMINION DURING THE SEASON OF 1889.

1. *Fraser River Hatchery, British Columbia.*—During the past year this hatchery planted in the Fraser River and its tributaries and other streams 4,419,500 salmon fry of the saw-quai (*Nerka*) species. Very few eggs of the quinnat (*Chouicha*) family were obtained the previous autumn of 1888. The fry were planted in good condition in rivers well adapted for their aftergrowth, and that were found to be most accessible at the proper time for distribution. About 373,000 of the above number were put out, in the egg state, just previous to hatching; these were quinnat eggs. The loss of eggs during incubation was generally much less than formerly. No fry were planted in Vancouver waters last season. Experience went to show that fry kept in the nursery until the sac was wholly absorbed were safer to transport and more able to take care of themselves when turned out in the streams.

The officer in charge again recommends the introduction of shad in the British Columbia waters. He reports some of these fish were caught in the Columbia River, and at Puget Sound, and along the Vancouver coast, but none in the Fraser River. Applications are made for Ontario whitefish for British Columbia waters. Those which are native to British Columbia lakes are inferior, and cannot be obtained on account of the remoteness of the lakes inland. The gross number of salmon put out of the hatchery since commencement is 19,065,500, from which it is said unmistakable evidences of success are shown. In the Harrison the increase is most marked. The Indians were at first unbelievers in fish culture; they are converts now, after seeing the masses of fish in the streams supplied with young from the hatchery. Satisfactory certificates from canners regarding the general improvement of the fisheries, which they attribute in a great degree to this hatchery, will be found appended to the general report.

The number of ova collected in the fall of 1889 was very large, double that of 1888. Some 9,233,000 were laid down, all Saw-quai eggs; the quinnat are not taken

at the same time as the saw-quai. The latter are most valuable for canning purposes. These eggs are at present in the best of condition.

Repairs, to a considerable extent, must be made upon the hatchery another year. Foundations require renewing; new hatching troughs must be had; the upper floor should be fitted up for hatching purposes; the roof is leaking; the present water flume is absolutely unsafe and must be made anew to avoid the total stoppage of the water supply another year.

2. *Sydney Hatchery, Cape Breton, Province of Nova Scotia.*—There were turned out of this nursery into the waters of Cape Breton Island, in 1889, 2,034,500 young salmon. The yield from eggs laid down in 1888 was very fair—about 76 per cent. No less than seventeen of the principal streams of the island received their quota of fry. They were reported to be planted out in the best possible condition.

The catch of parent salmon the present season of 1889 was very good in the rivers where the operation of capturing them was carried on; the streams were largely filled with salmon, but it was noticeable that they were uniformly smaller in size—many grilse were also taken, a circumstance hardly hitherto known in these waters; the rivers were actually teeming with young salmon. This increase is pretty unanimously attributed to the work from the Sydney hatchery.

The number of parent salmon caught this season was 631. They were taken in the Margaree, Middle, Lower Middle, Sydney and Salmon rivers—the greater portion, or 280, of these fish were captured in the Margaree. Of the whole lot, 379 were females from which were collected 2,540,000 eggs, an average of about 6,700 to each: these eggs are now undergoing incubation, and a large crop of fry is expected from them. But slight repairs of any kind or improvements were made at the hatchery during 1889. A new floor will be required another year for the hatching room; also a coating of paint for the whole building—in other ways the establishment is in very good condition. A request is made for a supply of land-locked salmon to stock a number of fresh-water lakes in Cape Breton, which are said to be well adapted for these fish.

3. *Bedford Hatchery, Province of Nova Scotia.*—A large number of salmon-trout and whitefish eggs were received by this hatchery from the Ontario nurseries —about 3,000,000 of whitefish eggs from Sandwich, and 500,000 salmon-trout from Newcastle. These were transferred during the winter in the semi-hatched state. Upon their arrival about 1,200,000 of these were sent on from Bedford to temporary auxilliary hatching huts at Antigonish, Queen's, Yarmouth, Halifax and King's counties. These small temporary hatcheries have been found to answer the purpose admirably, from an economic standpoint, as well as insuring greater certainty of success in the planting of the fry in the localities proposed to be supplied. It would be found almost impossible to transport the fry from the Bedford establishment at these long distances in the spring of the year without very great loss, whereas in the egg state they can be readily conveyed any time during the winter to these auxiliary hatcheries, which are built near to where the fry are required, so that when hatched the little fish can be planted in the waters at comparatively trifling expense, and with a much greater certainty against loss.

The planting of the salmon and whitefish was performed satisfactorily; some losses took place with the salmon trout. The officer in charge of the Bedford hatchery advises the continuance of this work of stocking the numerous inland lakes of Nova Scotia with the salmon-trout and whitefish of Ontario. He also advocates the erection of one of these small auxiliary hatcheries in each of the counties as the best means for accomplishing this end. The number of salmon fry distributed in the several counties of this Province was 900,000; of salmon-trout fry, 450,000 were put out, and of whitefish fry 2,500,000, making a total of 3,850,000 fry of the salmon family that were planted in the waters of Nova Scotia from the Bedford institution during 1889. Mention is made of a marked increase in the salmon fisheries of Nova Scotia since the introduction of artificial fish culture, which should warrant the work to be carried on upon a much more extended scale.

The success attending the capturing of parent salmon, and collecting of eggs during the past season, was very satisfactory. At Musquodoboit River 270 were taken, and at West River 67, were netted in all 337 salmon. Of these, 231 were females, which gave 2,300,000 eggs, an average of about 9,950 to each female fish. These eggs at the present time are showing the embryo fish within them and the prospects of a successful crop of fry at the coming spring is confidently expected. The establishment throughout is reported to be in good condition.

4. *Dunk River Hatchery, Province of Prince Edward Island.*—This hatchery has not been in operation during the past two years, by reason of the breakage of the dam which gave the water supply to the breeding troughs. It will be put in order for general fish-breeding purposes during the coming season of 1890. Beneficial effects have been felt from its former operations in many of the streams of the Island.

Mr. Hackett, Inspector of Fisheries for Prince Edward Island, says:—"Salmon was reported as being plentiful in all the principal rivers of the Province this season, and in many small rivers where they have not been seen for years numbers have been seen this fall. This is, no doubt, the result of the fry placed in the rivers a few years ago.

"If the work of hatching and distributing fry were continued, and better protection given the rivers than that afforded them of late years, I am convinced that salmon would become most abundant in our coast waters, and instead of being practically of no account, as at present, the salmon fishery would in a few years become a valuable industry."

5. *St. John River Hatchery, Province of New Brunswick.*—A series of misfortunes has befallen this hatchery with regard to getting parent fish for supplying it with eggs. numerous trials have been made to capture salmon on the Tobique, a branch of the St. John River; some seasons moderate success has attended the work, but upon the whole failures have prevailed. The past season not a fish was taken, and supplies of eggs for this hatchery will have to be got from the Ontario hatcheries and from the Restigouche establishment. The recommendation of the officer in charge for procuring parent salmon at the St. John Harbor fisheries in like manner as at Restigouche, Gaspé and Tadoussac, should be carried out, as sufficient numbers of salmon are taken in the harbor weirs to warrant full supplies of ova for this nursery, and at less cost than has attended the fruitless trials on the Tobique. The supply of ova for the St. John hatchery for the season of 1889 was obtained as follows—3,000,000 whitefish and 1,000,000 salmon-trout eggs were transferred from Sandwich and Newcastle, in Ontario, and 150,000 salmon eggs were got from the Restigouche hatchery. These were safely transported in the semi-hatched state, and duly hatched out in the spring of 1889, and planted in many of the lakes and rivers of New Brunswick, in the following proportions of fry—2,600,000 whitefish, 830,000 salmon-trout, and 140,000 salmon. Mention is made of whitefish and salmon trout being caught in some localities where the fry had been planted from this hatchery in previous years, and where they were not formerly known to inhabit. These evidences of practical results from the introduction of salmon-trout and whitefish into New Brunswick waters are encouraging, and should be continued on a much larger scale.

Some repairs are required to give permanency to portions of the building, and should be carried out next season.

6. *Miramichi Hatchery, New Brunswick.*—This hatchery produced 800,000 fry from Miramichi River salmon eggs, and 50,000 from ova obtained from the Restigouche hatchery. These were all successfully planted in the Miramichi River and its branches. They were in accordance with instructions, put far up into the head waters of the stream.

A request is made by the officer for a supply of white fish eggs to stock a lake a short distance from the hatchery, in order to introduce this fish into that section of New Brunswick. The lake is well adapted for the experiment. Evidence is given of the certainty of the growth of the salmon fry to "parrs" and "smolts," where these young salmon were found in great numbers in small streams in which fry from the

hatchery were planted, and where parent salmon could not get to lay their eggs. This fact, with so many others previously known, must disprove the theory of many skeptics in that section who assert that all fry put out of the Miramichi hatchery die, or are eaten up by other fish. The officer in charge reports that salmon fishing in that section was just as remunerative last season as for any previous five or six years; and that the majority of the fishermen give credit for this steady catch to the supplementary aid received from the great number of young fry put in the river from the hatchery. They say in fact, that if there were no other source of supply than the natural one the salmon fisheries on the Miramichi would soon become a failure. A well-drawn comparison is made by citing the almost complete extermination of the bass fishery on that river, where their natural reproduction is the only means for keeping up the bass fisheries. The smelt fisheries of that river are also given in proof of the fact that some other than the present method of protection, and natural propagation, must be resorted to, to save this fishery from total destruction in a few years. With these facts of the bass and smelt fisheries rapidly declining, and the salmon fisheries increasing their yield from former years, positive evidence must be drawn that some strong factor is at work to produce this result; and why should not the many millions of artificially bred fry put into these rivers annually, which otherwise would not exist, be entitled to a reasonable share of credit for this improvement of the salmon fisheries, whilst without this aid the bass and smelt fisheries, especially the former, are fast declining.

The fall run of the salmon was late in entering the river. It was remarked that many of them were very large fish. Some fishermen advance the idea that these larger salmon were the product of the Restigouche fry previously put in the river. Grilse were very abundant in the river; as many as a hundred were taken at a single sweep of the net in some pools when seining for the parent salmon. Fishermen now seem to generally admit that the aid from the hatchery has shown itself to be the surest safe-guard against the depletion of salmon in the Miramichi.

The gathering of eggs last autumn was more successful than for years previous notwithstanding a heavy freshet prevented the taking of many more parent fish. The statement is made that poachers held full sway and destroyed great numbers of breeding fish during the close time, on account of the guardians not being appointed at the proper time. The number of parent salmon captured on the different branches of the river was 293, of these 153; were females, from which were taken 1,100,000 eggs or an average of some 7,190 from each. This high average of eggs from each female is proof of the larger life of the salmon this year, as only an average of 5,530 ova were got from each fish last year.

The hatchery and its appliance generally are in good working order, and the eggs, from present appearances give prospects of a larger crop of fry.

7. *Restigouche River Hatchery, Province of Quebec.*—This hatchery turned out 1,280,000 young salmon, and transferred 200,000 semi-hatched eggs to other nurseries; 100,000 of the fry were put in the Métis River; the balance were planted in the Restigouche and its principal tributaries, namely the Kedgewick, Upsalquitch, Patapedia, Metapedia River and lake, and the several brooks entering the Restigouche. The method of planting the fry is admirable; they are towed up in scows, so constructed that the little fish escape gradually through openings, and are seeded so to speak all along the extent of the river, where they immediately hide amongst the gravel and stones in the shallow water, along the edge of the stream. In locations where scows cannot be towed the fry are carried in cans in canoes to their destination. The distribution was perfect, and safe throughout.

Greater success than usual attended the capture of parent salmon; 584 were procured in May, June and July; 475 of these were taken in the Departmental net at the reservoir; 30 in the other Government net at Mission Point, and only 79 purchased from fishermen. The daily catch is shown in official report, Appendix No. 7. A small number were injured in the nets; those not likely to recover were sold on account; 259 females were spawned, and gave 3,022,000 eggs, an average of 11,667 ova to each female. The impregnated ova were carried some fifteen miles up

river to the hatchery. It will be necessary to transfer some of these eggs to other hatcheries, as their number would be too great and cause overcrowding and loss of fry at the hatching time if not thinned out. It is proposed to supply the St. John River hatchery from this stock of eggs. Important repairs will be needed at the salmon pen or reservoir before another season, by building substantial block piers for strengthening the wire-work or casing of the pond to prevent the escape of the parent salmon. Great precaution is required to make this enclosure perfectly safe, otherwise the whole season's catch of parent salmon might escape, and a year's operations of the hatchery would be lost. These piers, and additional wire fencing, are absolutely necessary to insure safety for the reservoir next season. Some new twine netting for repairing the salmon nets must be procured also.

The officer in charge reports the first run of salmon to have been a fortnight sooner than usual, caused by the very early spring, which opened up the river long in advance of former years, before the netters were prepared to set their nets, thereby losing the benefit of this first run. Yet the general catch of salmon in the estuary and bay was good, and the anglers also did well. Certificates are hereto appended from most intelligent fishermen and proprietors up river, giving conclusive evidence of the healthy state of the salmon fisheries of the Restigouche and the bay, which they attribute in a great degree to the continual annual supply of young salmon put into the river from the hatchery. Parrs and young salmon were very plentiful in the river the past season. The river guardians of the Kedgewick and of the main river also, and scowmen traversing the river, make statements that the spawning beds and bars all along these rivers were literally covered with salmon in the act of spawning last autumn. It is also reported that a great deal of poaching was practised by drifting and otherwise during the past season.

8. *Gaspé Hatchery, Province of Quebec.*—By the death of the late officer in charge of this hatchery, Mr. P. Vibert, another appointment was made in June last, of Mr. Henry Davis, who reports having captured 110 parent salmon in the Dartmouth River; of these 65 were females, and gave 820,000 eggs, making an average of 12,600 ova from each. Not one parent fish was lost from confinement in the reservoir from May till late in November, when they were turned out quite healthy. The planting out of fry commenced in June; 450,000 were distributed; 250,000 were put above the falls on the Dartmouth, 100,000 below the falls, and 100,000 in the York River. The building is in good repair, but requires painting outside. The apparatus, generally speaking, is in good condition. A pleasing circumstance in connection with this hatchery is that its beneficial effects have been felt in giving an increased average weight to the salmon caught in the adjoining River St. John which empties in the Gaspé Bay. The young fry bred from eggs of the larger salmon, natives of the Dartmouth River have, for many years been planted in the St. John River, where native salmon were formerly of a much less size than the Dartmouth fish. The average weight of the salmon taken in the St. John in 1889 was 22 lbs. The account given by an old reliable fisherman is that, from 1870 up to 1880, the average was 12 to 15 lbs. This increased till 1887-88, when it reached 18 and 19 lbs., and in 1889 reached 22 lbs. Some individual fish were taken at 30 lbs. The canoe men and fishermen assert that this extra size of the salmon is to be attributed to the operations of the hatchery in planting the fry bred from Dartmouth salmon in the St. John River. Reports go to show that great number, of young salmon parrs and smolts were observable in the upper waters, and the estuaries of the Gaspé Rivers.

9. *Tadoussac Hatchery, Province of Quebec.*—There were successfully bred at this establishment during 1889, 1,600,000 salmon fry, and safely planted in the principal tributary streams to the Saguenay River. It has been found that the fry put in the small lakes (Mowats) a short distance from the hatchery have thriven in a most satisfactory manner. Distribution in these waters will be continued, as the facilities offered for their ready growth, and passage to the sea are very great. A suggestion is made to discontinue the planting of fry in the St. Margaret and Little Saguenay rivers, as they are so largely filled with trout, and that additional supplies should be given to the extreme upper waters of the Main Saguenay, as salmon have

already been taken above Chicoutimi, where they were not previously known, and where fry were planted from the Tadoussac hatchery.

It has been somewhat difficult to obtain full supplies of parent salmon for this hatchery. The improvement this year has been very marked as a surplus, of 249 salmon were turned out of the net, over and above the number required to fill the hatchery with eggs. A total of 559 salmon were taken in the Departmental net; 249 were let loose again keeping 310 of the largest for hatchery purposes. The perfection of the mode of retaining parent salmon in the salt water reservoir from early in June till November, is shown by the loss of only two fish. There were 206 females spawned, from which 2,557,000 eggs were obtained, with an average of 12,400 ova to each, thus showing the fish to be of very large size. Spawning commenced 21st October, and terminated 9th November. The fish, when turned into the Saguenay, were perfectly sound and active, and gave the utmost satisfaction to numerous leading visitors who came to see their liberation.

The increase of salmon taken by netters was shown to be very good in 1888; an increase of 50 per cent. has been shown this year over that of last year, and the catch this year is nearly 300 per cent. over that of 1886, and with the same number of nets; an evidence of success which is substantiated by the letters of leading persons, who state that salmon were caught in the river Shipshaw and other streams above the town of Chicoutimi for the first time, which they consider to be the result from fry planted from Tadoussac hatchery. The officer in charge reports the hatchery to be in a dangerous state. It stands upon a pier of slabs which is badly decayed, and the building also is showing signs of decay, and either a large outlay for repairing or building anew must be done. A better and safer site can be obtained close by the small pond, from which the water could be run directly into the building, and thus save the expenditure and precarious nature of the long dall or raceway which conveys water to the present hatchery. It is urgent that something should be done during next summer to put the Tadoussac hatchery in a safe and proper working condition.

10. *Magog Hatchery, Province of Quebec.*—From this institution 1,700,000 whitefish fry were planted in Oxford, Massawippi, Megantic and Memphremagog lakes, in the Eastern Townships. There were also bred in this hatchery 1,100,000 salmon-trout from eggs from Newcastle, which were planted in the lakes of the counties of Brome, Sherbrooke, Megantic, Stanstead and Beauce. Both trout and whitefish were put out in good condition, and with very slight loss. The officer in charge reports again, as previously, that whitefish are seen in considerable numbers in some of the above lakes since being put there from the Magog hatchery; and that they were not known in these water previously. Netting and spearing being prohibited in these waters, few whitefiish can be taken.

Salmon-trout and black bass are still increasing, the spawning grounds were largely covered by these fish the past season. Illegal fishing is practised in these waters, and the reduction of means for guarding the shoals at the spawning time has given an impetus to the poacher to extend his illegal work. Necessary repairs to the floors are in progress and when complete the establishment will be in first class condition. The usual quota of salmon-trout and whitefish eggs in the semi-hatched state, will be transferred from Newcastle and Sandwich hatcheries to Magog at the proper time.

11. *Newcastle Hatchery, Province of Ontario.*—There was a very large output of fry and semi-hatched eggs of various kinds from this hatchery during 1889, forming a grand total of 8,566,000, consisting of salmon-trout, whitefish, speckled-trout and black bass. Their distribution was spread over numerous sections of the country; salmon-trout and whitefish were planted in many of the lakes of Quebec, Nova Scotia, New Brunswick and Ontario. The speckled trout were widely disposed of in localities where the numerous applicants desired them.

From the satisfactory acknowledgments received concerning the distribution generally, the eggs and fry were received at their destination in the most healthy condition; and the fry were liberated to the satisfaction of all concerned.

The officer in charge reports the necessity for procuring larger supplies of speckled trout ova, in order to fill the numerous and increasing demands which are being made by individuals to re-stock various streams of the county, which, in many cases, from improvidence, have become very much exhausted.

The system adopted the past season for procuring supplies of salmon trout eggs was eminently satisfactory. By the selection of certain fishing stations in Colpoy's Bay, at Wiarton, and working them with Departmental nets, under the supervision of Mr. Charles Wilmot, officer in charge of the Newcastle hatchery, the success in getting full supplies of ova within a shorter period of time, and at less cost, was very gratifying, showing that 11,000,000 of eggs were collected during sixteen days in November, as against 5,000,000 during the whole of November in 1888, under the then system of employing nets and fishing gear of all kinds from pound net fishermen. With the nets and fishing plant now owned by the Department, it may be safely concluded that the expenditure connected with gathering salmon-trout eggs for the several Dominion hatcheries requiring them will be considerably lessened in the future.

Appended to the Newcastle report is a schedule giving the numbers of fish netted, the quantities of eggs, and the dates in which they were collected. From this diary, and those of former years similarly kept, the most indisputable evidence is brought out, proving the wisdom of selecting the month of November as the proper close time for the protection of salmon-trout at their spawning time. It is asserted, however, by interested parties, that November is not the true spawning time for salmon-trout. The practical work of the fish cultural service after many years experience has shown that the eggs of the salmon trout are principally shed during November. If taken at an earlier period they are, in the majority of cases, not sufficiently mature to be susceptible of proper impregnation. This evidence should suffice to show that the present close season of the month of November is the correct one for salmon-trout.

The condition of the ova in the Newcastle nursery is very satisfactory. They are, however, somewhat overcrowded by the increased numbers now on hand. Relief must be given shortly, by transferring large quantities to Magog, St. John River, Bedford and Ottawa hatcheries.

With the now increasing demands from the Maritime Provinces for supplies of eggs of the commercial fishes of the great lakes, for introduction into their waters, it will be necessary to increase the hatching capacity of the parent establishment at Newcastle. Repairs of certain descriptions are, however, requisite, and will demand consideration the ensuing summer.

12. *Sandwich Hatchery, Province of Ontario.*—From the supply of eggs collected in 1888 there were turned out of this hatchery 21,000,000 of whitefish fry and 11,000,000 of semi-hatched ova; the former were planted in many of the principal lakes of Ontario, and the eyed eggs were transferred to hatcheries in Quebec, New Brunswick and Nova Scotia. The work of distributing the fry and transferring the eggs was satisfactorily carried out. When the work of whitefish hatching had been completed, operations commenced in collecting the ova of the pickerel, (doré), when 30,000,000 were obtained in Lake Huron; about 21,000,000, or 70 per cent. of these were hatched and planted in various places in Lakes Huron, St. Clair and Erie, and in the Detroit River. These fish are reported by the fishermen to be considerably on the increase through the agency of the hatchery.

The collection of whitefish during the past fall has been most satisfactory, nearly doubling the quantities of former years. This success is due to the means adopted by the Department in operating the Bois Blanc fishery by its own employés and fishing apparatus, together with the enforcement of a regulation that, fishermen who we permitted to fish during November should allow the eggs to be taken from the fish for hatchery purposes. The result was that 70,000,000 of ova were placed in the Sandwich nursery and in addition about 4,000,000 eggs were impregnated and scattered here and there in the Detroit River. Whitefish fishing on the river the past season was generally speaking much better than the previous year. It will be found neces-

sary to erect a temporary breakwater at Bois Blanc fishing station, to prevent injury to the fish put in the pens caused by the receding of the water from the effects of strong winds; $100 would make this provision.

The officer in charge says necessity exists for erecting another wind-mill, where the pickerel are caught in Lake Huron, in order to supply more water for the tanks in which the parent pickerel are kept till ripe for spawning.

The hatching capacity of the Sandwich hatchery must be enlarged: its growing importance demands this. The present deposit of 70,000,000 eggs in it causes great anxiety for their safety, by overcrowding; only half of the floor area is at present utilized for hatching purposes, the other half being used for dwelling purposes by the officer in charge and his family; outside provision should be made for the officer in charge, and the wholefloor area supplied with additional apparatus. In this way hatching room would be obtained for 150,000,000 whitefish eggs.

APPLICATION FOR YOUNG FISH.

From the numerous applications which are continually coming in from all parts of the country, it has been considered expedient to issue the following form of application and directions so that all parties desirous of obtaining fry of any kind from any of the hatcheries can be furnished with this blank form of application and directions which when duly filled in by the applicant and returned, will enable the fish cultural branch of the Fishery Department to form a more intelligent idea regarding the adaptability of the waters for the growth of the fish, where they are proposed to be planted.

DEPARTMENT OF FISHERIES,
FISH CULTURAL BRANCH, OTTAWA.

In consequence of the increasing number of applications for young fish, and for the distribution of fry from the Government hatcheries, the following regulations have been made by the Department: —

Hereafter no application can be entertained unless these regulations are strictly adhered to, and the application made at the time specified.

All applications must be made upon a blank form, a specimen of which is hereto appended. These forms may be obtained on application to the Superintendent of Fishculture, Ottawa, or from the various inspectors of fisheries and officers in charge of hatcheries throughout Canada.

DIRECTIONS.

The appended form of application for procuring young fish, and directions for planting them, is given to all persons who are desirous of applying for fry of such description as are bred at the several Government hatcheries.

It is requisite that the appended blank form shall be intelligibly filled in, and the directions strictly adhered to by all applicants, in order to insure successful results from the action of the Government and from such persons as are desirous of replenishing the waters of the country with increased supplies of fishes.

All applications for fry, or ova, of any description, must be made in writing on or before the 1st day of February of the year in which they may be required, addressed to the Department of Fisheries, Fish Cultural Branch, at Ottawa. If not made upon the appended form, one will be forthwith sent to the applicant, which must be promptly returned, duly filled up, when in due time the applicant will be notified of the quantity of fry that may be allotted to him, and the time when and the manner in which the young fish are to be obtained by him.

Special attention must be given by all persons receiving young fish to their being carefully and properly planted. They must not be thrown out by the pails full, so to speak, in one spot, but spread thinly over long areas, in well selected parts of rivers, lakes, streams or other waters.

Salmon fry (*Salmo Salar*) must be carefully distributed on the gravelly beds of rivers and streams, far up and near their sources as possible, where the water is pure and cold, with a temperature not exceeding 60 or 65 degrees.

Salmon Trout and *White-fish* fry, in order to thrive well, should be planted out on the shoals and reefs of deep lakes, having pure, cold water of a temperature ranging under 65 degrees.

Speckled-trout should be put in the pure, cold rapid parts of brooks or larger streams, on gravel beds, in sheltered places. Ponds and lakes fed by springs are also well adapted for them. They will not thrive well in waters of a temperature above 60 degrees.

Pickerel (Doré) and *Black Bass* may be planted in waters more sluggish, warmer, and less pure in their nature than is required for the salmonoid species previously mentioned.

Special attention must be given by all applicants to the foregoing directions.

SAMUEL WILMOT,
Superintendent of Fish Culture for Canada.

OTTAWA, October, 1889.

NOTE.—This page page of directions is to be kept by the applicant for his information when forwarding the appended application for fry.

FORM OF APPLICATION.

The undersigned applies for ____ of the ____ species

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which are to be planted in the public or private waters hereinafter described, to be procured from the Newcastle hatchery, Ontario, or from such other nursery as may be nearest and most convenient to the waters to be stocked.

1. Name of stream, pond or lake.

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2. Name of Province, county, township or town.

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3. Approximate size of stream or other water.

---

4. What kinds of fish have been, or are now, native to it?

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5. What is the nature of surrounding country? Is it wild or cultivated?

---

6. If a lake, stream or pond, what is its character as to temperature, depth, bottom and purity?

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7. What constitutes the ordinary food for fish in the water to be stocked?

---

8. Have the fish hitherto found in this water thriven well?

---

9. What is the sentiment of the inhabitants in the locality regarding protective laws for fish?

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10. Are the fishery laws well enforced? Give the name of the nearest fishery officer.

11. Give the name of the railway and station nearest to the water to be stocked.

12. If for a public water, what provision will be made upon arrival at station to carry fry to their destination? Give the distance, description of road and conveyance to be had.

13. If for private waters, give similar information as for question 12, but all expenses connected with transport and planting of young fish must be paid by the applicant. If convenient, an expert will be supplied from the nursery to perform this work, whose expenses must be prepaid.

14. Applicants will give the most direct route by land or water by which the fry can be most safely and speedily transported to their destination.

15. Applicants for speckled trout fry will be charged a moderate price per thousand to cover cost of eggs and hatching.

Prompt and complete answers to the foregoing queries will enable the Department to act intelligently on the application.

Date of Application, Name of Applicant,

P. O. Address,

EVIDENCE OF THE PRACTICAL RESULTS FROM ARTIFICIAL FISH BREEDING IN CANADA.

The following letters from reliable sources are herewith given, in evidence of some of the benefits which have been experienced from the planting of fry in certain localities, which were bred in the hatcheries :—

BRITISH COLUMBIA.

NEW WESTMINSTER, B.C., 23rd August, 1889.

SIR,—At a meeting of the Board of Trade, held last night, the following resolution was unanimously carried:—

"That this Board of Trade has every reason to believe that the Fraser River hatchery has been productive of much good, and the experience of this and last season proves beyond doubt that the numbers of fish coming into the river has greatly increased; therefore, this Board is of opinion that it would be mistaken economy to close said hatchery, and that the fishing interests of the Province are such as to make it desirable that the efficiency of the hatchery should be increased rather than decreased, and that an additional hatchery should be established at Harrison River, or some other suitable point."

Yours truly,
D. ROBSON, *Secretary.*

DEN'S ISLAND, 19th August, 1889.

SIR,—In reply to yours of 12th August, referring to the fisheries service, &c., I think by all means the hatchery should be kept up and the output increased. I also think some means ought to be taken to protect the natural spawning beds.

I remain, yours sincerely,

H. KIRKLAND,
Fraser River Fishery, Den's Island.

(*Extract.*)

NEW WESTMINSTER, B.C., 7th August, 1889.

"In regard to the Fraser River hatchery, I think I am able to speak more correctly on its work than any fisherman on the river. For over thirty years I have fished salmon on the river, and therefore know what should be expected from the various years as they came along. Last year and this I have caught many more spring salmon than ever before, and very many of these fish were under the usual size—a fact which convinces me that they are the product of the hatchery. My thirty years' experience teaches me that the large number of these small fish is not the result of accident.

"The unprecedented run of 'sockeyes' this year brings with it a phenomenon never before observed on the Fraser, viz., a great run of 'sockeyes,' averaging from $3\frac{1}{2}$ to $4\frac{1}{2}$ pounds in weight each. This has never happened before in my thirty years' experience, and I attribute it solely to the work of the hatchery. Last year there was a small run of these fish also.

"On the whole, I consider the hatchery a very important factor in maintaining the fisheries of the Fraser, and the removal of the hatchery, in my opinion, would be a genuine calamity. I trust the Fisheries Department will do nothing rashly in this matter, and in conclusion I would urge a strict maintenance of the efficiency now prevailing.

"I am, Sir, your obedient servant,

"WM. H. VINCENT."

LADNERS' LANDING, 19th August, 1889.

SIR,—Replying to your letter asking for my opinion regarding the utility of the hatchery, I would state that it is favorable. The fact that fish have been propagated in rivers to which they were previously unknown is evidence that their numbers may, by similar methods, be increased in their native waters. This has actually been done at Rogue River, Oregon, where Mr. R. D. Hume erected a salmon cannery and a hatchery some twelve years ago. The hatchery since its establishment has increased the supply of salmon three-fold.

I believe further that the hatchery under your supervision on this (Fraser) river has been of great benefit this year. The "sockeye" run is not ended, yet there are already more fish packed on the Fraser than were ever before put up in the whole Province during an entire season. Each and every cannery on the river has exceeded its greatest previous packs made on this run. The increased number of canneries this year partially accounts for the large aggregate output, but not for the uniformly greater pack of individual canneries.

To discontinue work at the hatchery would be a mistake which the Province cannot afford to have made.

Yours truly,

E. A. WADHAMS.

CANOE PASS, 15th August, 1889.

DEAR SIR,—I am in receipt of yours of the 12th inst., and in answer would say that in the matter of the hatchery it is my firm opinion that the big run of salmon this year is to be attributed to a great extent from the output of the hatchery, and it is to be hoped that the Government, instead of curtailing the expenses on the existing one, will establish another in some suitable place on the Fraser River. The salmon industry on this river has been a great success, and a great source of revenue to the Province this year, and will always continue to be so as long as it is fostered and protected by the Government. How any one (unless it could be through prejudice) can say but that the great sources of fish supply this season can be attributed to any cause outside the hatchery I cannot see. You can take, for instance, the supply of salmon for the year 1885, when there were only six canneries running, and it did not nearly average to each boat as much as they did this with sixteen canneries running.

I would strongly recommend that the hatchery should be continued and for the next three years let it prove its value, and I think it will convince the most bitterly prejudiced of these parties that may write against it.

I might quote instances of the great success of hatcheries, such as Rogue River, and also the hatchery of shad on this coast, but you of course are thoroughly conversant on these subjects, and I will not occupy your time in doing so.

I will conclude by strongly recommending that the hatchery should be continued.

Yours very truly,

THOS. E. LADNER.

LADNER'S LANDING, 16th August, 1889.

SIR,—We learn that the Department has been informed that the hatchery has been of no benefit to the river. How any one could make such a statement and give reasons for it greatly surprises us, and we can only think that there must be some other reason than the welfare of the country has made them do so.

Till this year the hatchery could not prove itself according to the accepted four year return. This year the run has been the best that we ever saw on the river when the hatchery had a chance to make returns, and we have no doubt in following years will greatly add to the output of the river, and be a source of revenue to the country at large, very much in excess of the present expenditure, and we think it would be a very great mistake if the Department should curtail or hamper the hatchery in the least.

Had they spoken of increasing its capacity instead of diminishing it, at least till it had a fair trial, it would have been much more reasonable, and we consider when the Department pays a much larger subsidy to eastern Provinces that do not turn out one-tenth of the returns of the Fraser, it would be very unjust to British Columbia. That the hatchery has not shown much return till now is not strange. You would not plant fruit trees and, unless they bore fruit in two or three years, dull them up. But that, in our opinion, would be the action of the Department should it decrease the capacity of the hatchery at this time.

We think the hatchery should be continued for at least three years longer, in order to see whether or not it improves the poor years, as otherwise it would not have been in operation long enough to prove its usefulness.

We remain, dear Sir,

Very truly yours,

LAIDLAW & CO.,
Delta Canning Co.

CANOE PASS, B.C., 15th August, 1889.

In answer to yours *re* hatchery on Fraser River, beg to state that, judging by the results this year, my opinion is that the salmon hatchery established on the Fraser River has increased the salmon run enormously.

I have the honor to be, Sir,
Your obedient servant,

D. DRYSDALE,
Manager Canoe Pass Canning Co.

LULU ISLAND, B.C., 16th August, 1889.

SIR,—I should say by all means maintain the salmon hatcheries. It has already done good, and we are just beginning to see the result. There is no doubt, in my mind, but that it will eventually fill up the off years, so that we will see no difference in the seasons, which at present are, as you know, very marked. There can be no doubt but that the salmon hatchery will be attended with the same good results as other fish hatcheries have on this coast. I have no doubt of the success of propagating, both for increasing numbers and improving quality. It is so in vegetable—why not in animal life?

We all know there were no shad on this coast until they were hatched and planted here.

I will respectfully recommend this to the Department. Do not protect trout in the rivers carrying large amounts of salmon, or the tributaries thereto, as they are the salmon's greatest enemy. I would rather encourage their destruction.

Trusting the hatchery will be maintained at any cost.

I am,
Yours very respectfully,

M. M. ENGLISH.

ANNISVILLE, 16th August, 1889.

SIR,—I am in receipt of yours asking my opinion on the utility of the fish hatchery.

I beg to say, that I wish others engaged in the canning business advocated and petitioned the Minister of Fisheries to establish a hatchery on this river. Since its establishment I am more confirmed in my opinion that it was a wise step in the interest of the fish industry, and I think it would be a most serious mistake should the Government consider it necessary to discontinue such a useful establishment.

I am, dear Sir,
Yours respectfully,

PETER BURELL,
British Columbia Packing Co.

BON ACCORD CANNERY, 15th August, 1889.

SIR,—In reply to yours, I may say that I am certainly in favor of continuing hatchery operations for a time at least. I do not think sufficient time has elapsed from date of its inception until the present to decide its results as a failure or success.

Spring salmon, I believe, take longer to mature than the "sockeye," and I understand very few of the latter were hatched until the run of 1886. I feel satisfied that we need not look for these until next year. From my view the hatchery on this river is but an experiment yet, and for that reason would continue it until results are proved beyond a doubt.

Aiding and protecting the natural spawning grounds, however, is something I would advocate most strongly. You, perhaps, know my views on this matter

already; and anyway I have not time to write them here; but as settlement and development on the river banks continue, correspondingly should efforts be made to maintain by all means the safest source of supply of salmon for the Fraser River, the natural spawning grounds.

To do this, if your Department cannot afford to expend anything in this direction, apart from the hatchery expenses, something worth while, I would suggest that the amount be equally divided with a natural spawning ground protective service until such time as the hatchery results are proved conclusively.

Yours respectfully,

D. T. MANN,
Manager.

VICTORIA, B.C., 13th August, 1889.

SIR,—We had always been under the impression that the hatchery has been beneficial towards increasing, or at least maintaining, the supply of salmon in the Fraser River, and this impression was gained from remarks made by fishermen.

Our own knowledge on such matters is very imperfect, and an opinion is therefore not of much value, but we beg to submit the following for consideration of the Department:—

Has the hatchery been in operation for a length of time sufficient to afford a practical test of its efficiency in increasing the supply of fish? If not, should it not be continued until a practical test has been made?

We presume you are the best judges as to whether any results have been obtained or not.

We remain, yours faithfully,

FINLAY, DURHAM & BRODIE.

SAN FRANCISCO, 1st February, 1889.

DEAR SIR,—Your favor of 4th ultimo has been forwarded from Ellensburg, and in reply will say that I have been operating a hatchery on Rogue River with some success for the past twelve years.

Being only an amateur at the business, have had many difficulties to overcome, but am gradually improving, and can see evidences of its benefits.

The pack at Rogue River the season of 1877 was 3,500 cases; spring of 1878, about 14,000 cases. The season of 1878 I turned out 350,000 salmon fry, and four years later packed 15,000 cases spring fish.

We have until this season only propagated "salmo quinnat," what are called "Chinook." This year we have also spawned "silversides." The ova is from fifty to sixty days hatching, according to temperature of the water. We kept the young alewives in troughs until umbilical sack is absorbed, and they are ready to feed. My hatchery has a capacity of 3,500,000 eggs. Owing to its situation, the cost of working is comparatively light. I think outside of repairs and improvements can operate for $1,500 per annum. I have not the figures at hand, but am sure it would come inside that amount. Trusting that I have answered clearly on the various points, I can assure you it will be no trouble to answer any further enquiries you may wish to make, although I may be rather slow in answering, as I am very busy, but would like to take leisure time to write up the matter more fully.

Yours truly,

R. D. HUME.

ASTORIA, OREGON, 14th September, 1889.

DEAR SIR,—Your favor of the 4th inst. is at hand, and contents noted. In answer will say that the pack of salmon for the Columbia River the past season is 320,000 cases, as near as I have been able to ascertain. The pack on the Sacramento is not far from 75,000 cases. The small streams along our coast are just commencing their fall pack, which will not be very large. I think it will not exceed 100,000, if it reaches that figure.

We turned out from the Clackamas hatchery this spring 5,500,000 fry, and have a good prospect of obtaining enough ova for that amount the coming season. The United States Fishery Commission still operate the Clackamas Station, in conjunction with the State Commission.

The shad are gaining very rapidly in the Columbia River; indeed, many have been taken and sent to market this season; some have been taken to weigh as high as five and six pounds, and the fish is far ahead of the Atlantic shad, being much fatter and of better flavor, and in a few years will be a source of revenue to our country.

Your reports came to hand with the letter, for which accept thanks. I have none of our reports for 1887–88 at hand, but will try and find one for you.

I have found a few copies of 1887–88, and will forward them with this. Your pack on Fraser River exceeds all expectations, and must go far to convince the most skeptical that artifical hatching can be made a success. I believe in the near future that all our streams will be re-stocked with an abundant supply of food fish by means of artificial propagation.

Yours truly,

F. C. REED.

ELLENSBURG, CURRY CO., OR., 17 September, 1889.

DEAR SIR,—Your favor of 23rd August received. The pack on this river has been greater so far this season than ever before, although of modest proportions as compared with Fraser. However, it is a small river in comparison. The benefits of the hatchery are conclusively shown, when we compare the conditions with other streams on the coast. This river has increased its pack every year since the hatchery was established, while the other streams have decreased, and as Rogue River is a very easy stream to fish, and has been done very closely, it seems as strong evidence that our work has been a great benefit.

The spring pack will be about 16,000 cases, about five times as much as was packed in a season before the hatchery was started.

I do not consider that we are fairly started at the hatching business yet, as we have in the past labored under many difficulties, which are now about overcome, and in future think we will be able to make a fair showing.

Yours truly,

R. D. HUME.

WESTMINSTER JUNCTION, 27th November, 1889.

SIR,—In regard to "sockeyes" salmon running up the Coquitlam River: I have lived here, and have fished in the Coquitlam River for the last eight years, and this is the first year that I have seen "sockeyes" salmon ascending the Coquitlam, which they did in considerable quantities for about six weeks this fall, showing clearly that they are the young salmon deposited in the stream from the hatchery. But the upper portion of the river is badly obstructed by log dams, preventing the fish from reaching the lake, and consequently a large spawning ground. If the the river was cleared of obstruction, which a few thousand dollars would do, it would be a good investment for the country.

Respectfully yours,

R. B. KELLY.

HALL'S PRAIRIE, SURREY, B.C., 30th November, 1889.

DEAR SIR,—In reply to your inquiry dated 19th November, relating to the salmon fry distributed by you in the Nicomekle River last spring, I have the pleasure and satisfaction of being in a position to inform you that the young fish here have done remarkably well, and that large numbers of them may be seen 6 inches and upwards in length. I think the experiment so far has been very satisfactory, so much so that the Council of the Corporation of the District of Surrey at their last meeting adopted the enclosed memorial (which please forward to the proper authorities), requesting that the waters of the Serpentine, Nicomekle and Campbell Rivers may all be stocked with salmon and shad fry. Thanking you for your willingness to place the fish in our river, and believing you will be perfectly satisfied with the results.

Respectfully yours,

HENRY T. THRIFT,
Clerk Municipal Council.

MEMORIAL *RE* SALMON AND SHAD FRY FOR SURREY RIVERS.

On motion of Councillor Armstrong, seconded by Councillor Shannon:

That whereas the waters of the Nicomekle, Serpentine and Campbell Rivers, in the opinion of this Council, are well adapted for the propagation and development of several species of food fish, which if introduced therein would soon be a source of profit to the residents of the neighborhood and a great benefit to the cities and towns of the mainland;

And whereas the salmon fry distributed in the Nicomekle River last spring by the officer in charge of the Government fish hatchery have so far exceeded our expectations, many of the young fish being 6 inches and upwards in length;

And whereas this Council believing that were the Government to undertake to stock the waters of the above named rivers with salmon and shad fry, it would be the means of inducing a most desirable class of settlers to locate on the Government lands near the rivers, besides proving a great attraction for tourists, etc., and furnishing settlers with a constant supply of those excellent fresh food fish;

Be it therefore resolved:

That the clerk prepare a memorial addressed to to the Minister of Marine and Fisheries, directing the attention of the Department to the above facts and requesting that action may be taken immediately, with a view to depositing a number of both kinds of young fish in the above named rivers in the coming spring.

Carried unanimously.

HENRY T. THRIFT,
Clerk of Municipal Council.

NANAIMO, B.C., 20th November, 1889.

SIR,—The "sockeye" salmon, or a trout-like fish which I believe must have been the "sockeye," were seen in great number in the spring, and the Indians remarked that they never saw so many trout in the river before. Since the spring I have not heard of or seen any strange fish in Nanaimo River.

I am, Sir,
Your obedient servant,

LOUIS A. GOOD.

QUAMICHAN, B.C., 20th November, 1889.

SIR,—I have the honor to report that the "sockeye" fry and eyed ova placed in the Cowichan River are now showing good results; a great number of fish of this species have been taken during the year, and when I was at the head of the Cowichan Lake last month we saw shoals of them from four and a-half to six pounds in weight. They seemed to be waiting to get up the mountain streams.

The Indians say that they have never been seen here before, and they now have faith in your fish culture, which before, when they assisted in placing the ova in the river, they thought would prove fruitless. Congratulating you on the result.

I have the honor to be, Sir,
Your obedient servant,

W. THOMAS,
Fishery Guardian.

NEW BRUNSWICK, MIRAMICHI HATCHERY.

SOUTH ESK, 16th December, 1889.

Jared Tozer, Esq., says: "Salmon were as plentiful this season as they have been for the past four or five years, some nets having taken even more than a uniform catch, while others have not done so well. Those nets which were in readiness to take the June run of fish, which entered our river this season about the middle of May, made good catches, while those which did not get to work before the usual commencement of the fishing season show a slight falling off."

John McColm, Esq., says: "My nets have taken more salmon this season than for any during the past five years. Our June run of salmon entered the river in May, on account of the early spring, and some fishermen complain of poor catches, but this is simply because they had not their nets in readiness to take this first run. Altogether, salmon do not show the slightest signs of decreasing in our waters during the past six years. This is, I think, greatly due to the benefits derived from artificial breeding, without which our supply of salmon would run short in a very few years."

Patrick Gillis, fisherman, says: "I have fished a set of nets near the head of the tide for past ten years, and I am of the opinion that salmon have been on the increase for the past six years. Certainly the catches of fish by nets in this vicinity do not show any falling off, and one would almost think it impossible for ten salmon out of one thousand to reach here when the way in which the river and bay is obstructed with netting below this point is considered, of which one-fifth was not in operation eight or ten years ago. Grilse have been very plentiful during the past summer. It is my opinion that artificial breeding is an almost incalculable benefit to our rivers, in keeping up the suply.

RESTIGOUCHE HATCHERY.

CAMPBELLTON, N.B., 9th December, 1889.

DEAR SIR,—In answer to your enquiry as to the state of the salmon fisheries at present, in comparison to what they were years ago, I beg to say I am the owner of a fishing station situated some two miles above Campbellton. I have been engaged in the salmon fishery for twenty years, and I believe, notwithstanding all the anglers and the great increase of nets in the bay and on the coast of late years, the salmon are more plentiful than they were years ago, the catch each year is more uniform, and the fish were larger this last season than I ever saw them before. I certainly believe these results are largely due to the planting of the millions of fry from the hatchery.

I am, yours truly,

WILLIAM PRATT.

METAPEDIA, 15th December, 1889.

DEAR SIR,—In reply to yours of the 10th inst., I can say I have been living on the Restigouche for forty years. I am the owner and still retain my angling privilege, some eighty rods fronting on one side of the river. I leased it last season to some sporting gentleman of New York for $100, it being the second year it was possible to lease it. The R. S. Club refused to lease, saying there was no fishing on it, but two years ago some thirty fish were caught, and last season twenty-five fish taken, averaging over 20 lbs. It is only of late years, and since the fish began to increase, that the anglers could be persuaded to fish in the long reaches of the river. I actually believe there are ten fish in the river now to where there was one twenty years ago, and the fishery has enhanced in value 500 per cent. It is reported by all parties that the river is full of fish. I have no doubt but what the hatchery, combined with protection, has been the main factor of bringing about this result.

I am, yours very truly,

NATHANIEL MOORES.

RUNNEYMEDE P.O., METAPEDIA, 16th December, 1889.

DEAR SIR,—In reply to your inquiry respecting the benefits (if any) of the Restigouche hatchery to the river, would say, my opinion is, owing to the increased numbers of nets on the coast and estuary since 1872 and the increase of anglers since 1880, that only for the hatchery the salmon would be nearly extinct, and the great increase of nets above referred to plainly shows that there must have been a corresponding increase of the fish.

I own over 480 rods of frontage on the river. I formerly set a salmon net thereon and never took, or caught, over four barrels per annum. Since 1880 I have only fished with my rod and have regularly leased my fishery to anglers, at an average of $200 per annum, and I attribute the extra benefits and regular annual supply to the Restigouche hatchery, which is no doubt also supplemented by the better protection afforded by the leesees. I may say, when properly angled by those who know how, my fishery averages from forty to fifty salmon yearly.

I am, Sir, your obedient servant,

JAS. H. MOORES.

TIDE HEAD, 13th December, 1889.

DEAR SIR,—In reply to your letter of the 10th inst. asking my views on the state of the salmon fisheries and the benefits of the hatchery: I have, as you know, been in the employ of the Restigouche Salmon Club, acting as guardian of the river around Tide Head for the last three years. I am the owner of a net fishery, but as it is in the boom limits and the great number of logs coming down annually has completely spoiled it. But some of my neighbors, who are more favorably situated, and also in the boom limits, made a very good fishing last season, the best for a number of years, and I am positive there was a very large run of salmon. I heard of some good catches among the net fishermen. Of course, there is a falling off in the estuary, but I think this is very easy accounted for when it is taken into consideration that the nets on the coast have increased of late years 50 per cent. The catch has also increased accordingly, and the fish that do escape the multitude of nets below, by the time they have reached the estuary they become by instinct so cautious as to avoid the nets, that they will not go into these only when the water is dirty, or the wind is blowing strong. The fishermen say they are so shy that they will not even mesh when in the pounds. They have to be hooked out with the gaff.

In going over my beat at night I have often seen the fish running in all directions over the shallow bars and places, and I believe there are ten fish in the river now to where there was one twenty years ago. I have noticed the young "smolts" playing about at the Tide Head in schools like smelts on their way out to sea. From what I have seen and read about artificial fish breeding, I believe the hatchery is

justly entitled to be credited with a large share of the preservation and healthy condition of the salmon fisheries as they now exist on the Restigouche and Bay des Chaleurs.

I am, yours very truly,

ROBT. D. GERRARD.

BROADLANDS, QUE., 9th December, 1889.

The Honorable

The Minister of Marine and Fisheries.

SIR,—In reply to your request for my opinion of the value of the hatcheries on the catch of salmon on the Restigouche River, I beg leave to say that, in my opinion, it is a very difficult, I may say impossible question to answer, as so many other things have to be considered.

It is a well known fact that for several years after Confederation, when spearing salmon was prohibited, and drifting in a great measure stopped, the salmon increased very rapidly until the year 1878, when the catch reached its highest point. But, since the year 1888, though the number of nets in the river above Campbellton has been reduced one-third, the catch has fallen off at least one-half on an average in the estuary.

I would account for this falling off in the catch partly by the great increase in the number of nets in the Bay des Chaleurs, and the trap nets which are used there, and partly to the excessive angling on the spawning grounds on the Restigouche and its tributaries.

From what I have read of the beneficial results of fish-breeding in other places, and what I would suppose should be the result here, I would say that the placing of young salmon in the different streams must be of great benefit. The only thing is that the number placed has been too small.

As I cannot give a more positive answer to your question,

I have the honour to be, Sir,

Your obedient servant,

MELVIN ADAMS.

CAMPBELLTON, 20th August, 1889.

DEAR SIR,—Being always in favor of pisciculture and of salmon breeding in particular, since it was first started in this place, I feel much pleased with the statements of overseers and guardians on the River Restigouche, of the immense numbers of salmon in the pools and on the spawning beds this season, since all fishing has ceased. In my opinion no better proof could be given of the success of your efforts in artificial breeding. From 1830 until 1860 there were but few stands of nets comparatively in the Bay des Chaleurs and River Restigouche, and although only the most choice spots were occupied it was only in exceptional years they were considered remunerative. My business led me to be on the river towing and otherwise for thirty to forty years, and I can truly say it was a rare thing to see salmon anywhere in the stream after the 1st of August in any year within that time. What a change now! The pools in places are crowded with them, and they can be seen after the 20th October almost anywhere on the bars from the First Islands to the head of the river, in the act of spawning. Although the complaint may be true that there has not been so many salmon taken from Dalhousie up to the First Islands in the last seven years, on an average, as there was in the preceding seven years, it can be accounted for by the great number of new stands placed along the Bay des Chaleurs shores, and the great improvement in the mode of fishing in late years. I may also state in my experience I find the salmon much more wary of late than they used to be, and shun the nets in calm weather. I think I am not wrong in stating that the breeding establishment has been a good thing for all concerned on Bay des Chaleurs and Restigouche Rivers.

I am, Sir, Yours truly,

ALEX. R. CHAMBERLIN.

After that portion of this report dealing with the subject of sawdust (from page 12 to page 23) was in print, other letters of importance treating upon the effects of sawdust on fish life, came to hand, namely, from Commissioner Stillwell from Maine, and Mr. Cheney from Glen's Falls, New York State. Extracts from these letters are hereto added as follows:—

Extract from letter of Henry O. Stanly, Fish Commissioner, State of Maine, *in re* sawdust:

"In regard to the disposition of mill waste in this country, would say the only method (except that of turning it into the stream) at present is by burning. Large quantities of sawdust and other waste are thrown into the Penobscot, Kennebec and other rivers. The coarser parts, such as edgings, bark, &c., which is not used for firewood for domestic purposes, is in part burned on the premises, in a receptacle for that purpose, but much of it finds its way into the rivers, and in many places fills the rivers to a great extent and damages the navigation very much.

"It does not seem to have injured the salmon so much as any one would be likely to suppose. The reason (in my opinion) is that the mills are located low down on the river below the natural spawning or breeding haunts of the salmon. The fish when they come into the mouths of the rivers stop but a short time, but run up past the mills, escaping the injurious effects of the sawdust, &c., &c. I think the most injury is done by its filling the beds of the rivers and obstructing navigation.

"I have no doubt it has a very injurious effect on other kinds of fish which do not run far up rivers, such as the alewife, shad, &c. Where the sawdust and other *débris* cover the bottom of spawning grounds I think they are ruined. What we fear much at the present time is the waste and chemicals from the pulp mills which are now being built on every stream in this country. It is death to every living thing in the water in the vicinity where the waste is turned into the river. Unless a remedy for the evil is soon solved the salmon fisheries in Maine will be a thing of the past."

Extract from letter of A. N. Cheney, Esq., editor *Fishing and Shooting:*

"Saw-mills on the upper Hudson are water-mills, and since the first one was built it has been the custom of the mill-owners to dump the sawdust into the river. It has been the custom also to throw edgings and other woodwaste into the river; but it ceased a short time ago, when the edgings, etc., were sawed into stove wood. Only during the last winter have the saw-mills at this place arranged to save the sawdust that it may be used as fuel in a paper-mill near at hand. Tight boxes with sloping bottoms are built under all the saws, gangs, slabbers, butting, stave, heading and lath saws. The sloping bottoms of the boxes conduct the sawdust to a wooden trough through which passes an endless belt of leather, on which are fastened iron cups or buckets (similar to the buckets used in flour-mills for raising flour) that draw the sawdust through the trough to a storing pit, from which it is carted to the paper-mills. As this storing pit is at the bottom of the mill, the sawdust is lifted to the ground floor by another series of iron cups or buckets on an endless chain. These are called conveyors, and are placed horizontally under the mill floor, and all lead from the different saws to the storing pit. *The manner of saving the sawdust is simplicity itself, and as it requires no hand labor it is inexpensive.* * * * * That sawdust in one way does do injury to the fish there is no question in my mind, for it covers the spawning beds, smothering eggs and young, and except in very swift water it leaves no place after a time for a fish to make a decent spawning bed.

"How much poison comes from the tons of hemlock sawdust deposited annually in the river I cannot say, but I believe the Pharmacopœia says that it takes only eight pounds of hemlock to make one ounce of the oil, and as Socrates came to his death from hemlock water, it does not seem that our fishes should be able to withstand what proved to be the undoing of the Grecian Sage, unless modern fishes are tougher than the ancient Greek. Nor can I say what poisonous gasses are generated by the rotting of the masses of sawdust which covers the river bed and lines the rivers banks, partly in the sun and air, and partly in the water, a soggy offensive

sight if not a breeder of disease. The tannin in oak troughs, and the turpentine in pine troughs will kill young fish, if the troughs are not covered with tar or asbestos, as it has done in hatcheries where these precautions have been neglected. Why then should not hemlock and pine sawdust under some conditions be injurious to older fishes ?"

CONCLUSION.

Having submitted the various matters relative to the operations of artificial fish culture in Canada during the past year, as related above, it will be unnecessary to add more, but simply draw the attention of your Department to the importance of extending its operation, so that all parts of the country may be enabled to partake of the benefits of an industry which has now become world-wide in its operations.

In the appendices hereto will be found the reports of the several fishery officers in charge of the hatcheries of the Dominion.

All of which is respectfully submitted,

SAMUEL WILMOT,
Superintendent of Fish Culture for Canada.

FISH CULTURE.

1889.

APPENDICES.

REPORTS FROM THE SEVERAL OFFICERS IN CHARGE OF FISH-BREEDING ESTABLISHMENTS IN THE SEVERAL PROVINCES OF CANADA FOR 1889.

1.—FRASER RIVER HATCHERY.

PROVINCE OF BRITISH COLUMBIA.

Report of the Officer in Charge of the Fraser River Hatchery for 1889.

I have the honor to submit the sixth annual report of this hatchery, together with a statement of the distribution of fry and collection of eggs during the season of 1889.

From the eggs laid down in the hatchery during the fall of 1888 the following numbers of fry were distributed on the dates and at the places here mentioned, namely:—

Saw-quay Salmon (Nerka.)

February	13, 1889,	Pitt Lake	200,000
do	20, 1889,	do	425,000
do	28, 1889,	Harrison River	600,000
March	6, 1889,	Sumas Lake	400,000
do	14, 1889,	Pitt Lake	600,950
do	21, 1889,	Chilawheck Rapids	600,000
do	23, 1889,	Harrison River	600,000
do	26, 1889,	do do	550,000
April	3. 1889,	Silver Creek	223,000
do	11, 1889,	Nicklemockel	60,000
do	13, 1889,	Coquitlam	161,000
Total			4,419,500

Included in the above number were 373,000 fry of the quinnat salmon (chouicha), which were put in the Fraser and Harrison Rivers. Of these the percentage of loss was much greater than the "Nerka," on account of the fish having been caught by gill nets and kept in floating cribs, which caused bruises that developed fungus and unhealthiness of the fish. At the time these salmon were caught and stripped there was only one experienced man in charge of operations, the caretaker being at Okanagan, and Mr. McNish at River's Inlet, where each were doing duty as fishery guardians. The "quinnat" fish were no doubt roughly handled by the Indian fishermen, for it was impossible for one man to be up day and night watching them. They were also the first eggs laid in the hatchery, and as the season was very mild

and the water warm, fungus had a better chance of developing. But notwithstanding the loss on the "quinnat" salmon ova, taking the whole number laid in the nursery, the rate of mortality was nearly one-half less than in any previous season. This success is attributed to the fact that the parent fish last season were handled by men who had had experience and a knowledge of the business, and that my orders in stripping fish were strictly adhered to, which was that only three fish should be stripped at a time, and that it should be done under the shade of a tent or tree, so that the sun's rays would not strike on the eggs, and that only a portion of the eggs should be taken from a fish at a time, and if the slightest disease was noticeable the fish were to be rejected.

The eggs were laid in wire baskets as soon as they reached the hatchery, in place of being left on the trays, so that sedimentary matter had less chance of collecting on them and fungoid growth was less likely to prevail.

There was no fry distributed in the rivers on Vancouver Island last season, as the capacity of the hatchery was capable of hatching the quantity of eggs laid in, and as the intention of the hatchery was to keep up the supply of fish in the Fraser, it was thought best to distribute them in it and its tributaries.

Owing to the lateness of instructions and the difficulty to obtain suitable steamers at the proper time, the fish were held in the nursery until the sack was absorbed and many of them were taking food before leaving the troughs. The cost of distributing them at this age came to a little more than in previous years, as there could not be so many put in the distributing scows at once, which caused a greater number of trips with the steamers. But from this year's experience I have learned that it is better to keep the fry in the nursery until the sack is all absorbed. They are then more active and better fitted to protect themselves.

No shad were caught in the Fraser this season to my knowledge, but a good many were caught in the Columbia River, Puget Sound, and along the Vancouver Island coast. I would again recommend, as in previous years, that some shad fry be secured and put in the Fraser and other streams in this Province.

Whitefish have not yet been introduced in any of these waters from Ontario, although enquiries still continue to be made for them. The lakes that produce native whitefish are so isolated that they can not be got to market without heavy cost, and even then the quality of the fish is quite inferior to those of the east.

The quantities of salmon fry distributed from the hatchery since its erection are as follows:—

The year	1885	1,800,000
do	1886	2,625,000
do	1887	4,414,000
do	1888	5,807,000
do	1889	4,149,500
	Grand Total	19,065,500

From this output of fry there has been unmistakably a great deal of benefit derived, as will be seen by the enclosed certificates from the canners of the Fraser River, the fishery guardians of Nanaimo and Cowichan River, the corporation of the municipallty of Surrey, and Mr. Robert Kelly, of Couquitlam. From my own experience on the Harrison River I must say that, I think the fish have increased tenfold, as in the year of 1885–86 we could hardly secure any parent fish in the Morris Creek, where we now catch them numerously. Formerly they had to be swept from the lake with a net, and only a few hundred entered our traps the first two seasons. Last year the fish were in greater numbers than before, but of a smaller size. I believe the large run in Morris Creek in the year 1888 was caused by the output of fry from this nursery and the extraordinary masses of "suckeye" salmon that ascended all the streams of the Harrison, but more particularly the Morris Creek were also due to the output of fry from this establishment. It would be almost im-

possible for me to attempt to describe the quantities of fish that were in some of those streams, so I enclose with this report two photographs, one showing the fish in the stream ascending it to the traps, and the other showing the masses of fish that were crowded into the pens during the spawning season.

The Indians living on the Harrison, where the parent fish are captured, were previous to this season unbelievers as to the benefits from the hatchery. But now they are decided to a man that the enormous swarms of fish seen this season were caused by the fry put into this hatchery.

I enclose also for publication, in addition to the canner's certificates, a letter from the State Fish Commissioners of Oregon, United States, which gives their views on the success of the Clackamas hatchery; and a letter from R. W. Hume, of Ellensburg, who operated at his own expense a hatchery on Rogue River, State of Oregon.

Collection of Ova.

The number of eggs laid in the hatchery this fall amounted to 233,000, all of the "suckeye salmon"(Nerka). Operations were commenced on 23rd September and ended on 7th November. There were no "quinnat" salmon eggs taken this season, as the fish are not procurable in traps at the points where the "suckeye" salmon are captured. The "quinnat" have to be caght by gill nets, which is more expensive, and so injures the fish that they give unhealthy eggs. In any case the "suckeye" salmon are considered of better color, and of more value to the general trade.

There was no count kept of the fish captured, or that passed through our traps; in fact, it could hardly be done by any other means than a salmon register, as you will notice by the enclosed photo, that our pens were crowded all the time. We therefore only selected the healthiest and strongest salmon, allowing the others to pass up the stream by the opening of a slide gate in the trap. However, the suckeye salmon will not average over 5,000 eggs to the fish, and from the majority of the fish stripped this season there was seldom more than 3,000 eggs taken from them.

Repairs.

This establishment has now run six years without any repairs, and a building of this kind soon goes to wreck. During the month of April or May next it should be fitted with a new gutter pipe, as the old one has fallen off. New hatching troughs are necessary to replace some that are very leaky. The foundations of the building under the water tank requires re-blocking, as the old ones are quite rotten. The upper part of the building should be fitted with a new races and troughs, in order to increase the capacity of the hatchery. The roof of the building should be repaired, as it is leaking in places. The grounds should be put in new shape, and the entire building should have a coat of paint. A new and larger flume for conveying the water supply is absolutely necessary, as the one used now is unsafe and may at any time break down, causing the destruction of all the eggs or fry in the hatchery.

I have the honor to be, Sir,

Your obedient servant,

THOS. MOWAT,
Officer in Charge.

2.—SYDNEY HATCHERY.

PROVINCE OF NOVA SCOTIA.

Report of the Officer in Charge of Sydney Hatchery, 1889.

SIR,—I have the honor herewith to submit my annual report upon the work done at this hatchery during the past year.

As stated in a former report, I laid down in the hatching troughs in the fall of 1888, 2,678,000 ova; of these, 2,034,500 fry were hatched and distributed in the best possible condition in the following streams, viz.:—

Margaree River (Inverness Co.)	200,000
Shubenacadie River (Cape Breton Co.)	50,000
Sydney River do	350,000
Ball's Creek do	150,000
Trout Brook do	150,000
Black Brook do	134,000
Grand Lake do	100,000
Eskasoni River do	50,000
Salmon River do	100,000
George's River do	150,000
Leitch's Creek do	50,000
McLean's Brook do	150,000
Middle River (Victoria Co.)	150,000
Baddeck River do	150,000
Grand River (Richmond Co.)	50,000
Iron River do	50,000
Hatching Brook (Cape Breton Co.)	50,000
Total	2,034,500

The following table shows the number of parent salmon caught this season and the rivers in which they were caught, also the number of ova laid down in the hatching troughs this season.

Name of River.	Males.	Females.	Total.	No. of Ova.
Margaree River	76	204	280	1,470,000
Middle River	60	50	110	254,000
Lower Middle River	55	45	100	236,000
Sydney River	30	50	80	400,000
Salmon River	21	30	51	180,000
Total	242	379	621	2,540,000

The above is not strictly correct as to numbers of male and female, it being almost impossible to make an accurate count at Margaree and Middle Rivers. The number of ova is taken from the actual condition of the trays; after they were laid down and all the ova picked out that were affected by transportation from the different spawning places.

In the waters of this Island it is hard to show an increase in the salmon fisheries. The rivers stocked from the hatchery were in years gone by good salmon rivers, and if to-day a goodly number of salmon were caught, the artificial means employed would not be fully credited for its assistance. This season all our fish seem to have left us; even the cod, mackerel and herring deserted our shores; the catch of salmon was also below the average. There must be some general cause for this. If we look back over the last ten or fifteen years we find that every year is not equally prosperous with fishermen; some years they reap a goodly harvest, while perhaps the

next year they are disappointed, and the fisherie is a failure. This is true of all kinds of fish, particularly salmon. Does not this lead us to believe that salmon do very frequently break the law and stray to other waters, the law governing their actions being the supply of food. Last season our salmon fishery during the open season was, if anything, above the average; this year it was below, but during the months of September, October and November they were as plenty as usual in the river and the average high. There was one thing very noticeable in the fish handled this season: they were small and of a uniform size; we have handled more fish from 7 to 9 pounds than ever before. We also handled some female grilse which we never saw in these waters before. Our rivers are teeming with young salmon, their increase being unanimously attributed to the work of this hatchery.

The improvements done about the place this year were not great. As reported last year, the floor of the hatchery room required thorough repairing—in fact, a new floor. I received no instructions to proceed with the placing of a new floor, and consequently confined myself to the repairing of it. I found it in a very bad condition. Two pieces of joist had to be removed and new ones put in. About one-quarter of the whole floor had also to be replaced. The remainder is scarcely good enough to do for the winter. The whole floor will require to be taken out next summer and a new one put in. I also did some work to the outhouses. One required some shingling and roof boarding. Everything in and about the hatchery now is in thorough condition, except the floor already mentioned. The outside of the house also is sorely in need of paint. I would recommend that the painting be attended to as early as possible in the spring. The flooring can be done any time during the summer.

We have in this Island some of the finest fresh water lakes in the world, and it seems now the time has come when we should get a supply of land-locked salmon for them. With the facilities we have now of conveying fry and ova from the other Provinces to this most easterly part of the Dominion, there is no reason why we should not have these fish introduced here. I understand that strong efforts are to be made this season to secure some of these fish for our lakes. I hope you will favor the scheme and give us at least enough for our lakes.

All of which is respectfully submitted.

I have the honor to be, Sir,

Your obedient servant,

C. A. FARQUHARSON.

3.—BEDFORD HATCHERY.

PROVINCE OF NOVA SCOTIA.

Report of the Officer in Charge of the Bedford Hatchery for 1889.

SIR,—I have the honor herewith to submit my report upon the operations at this hatchery during the past year.

As previously reported, the number of salmon ova laid down last year was 1,100,000. To this number was subsequently added 3,000,000 whitefish, 500,000 salmon-trout ova, making a total of 4,600,000.

Shortly after the arrival of the whitefish and salmon trout ova from Ontario, I received instructions to distribute portions of them amongst the several small auxiliary hatcheries located in different parts of this Province.

This distribution was as follows:—

Lochaber,	Antigonish	County,	Salmon-trout ova	.....	120,000
do	do	do	Whitefish	"	300,000
Kempt,	Queen's	do	Salmon trout	"	100,000
do	do	do	Whitefish	"	500,000
Tusket,	Yarmouth	do	Salmon-trout	"	60,000
Sheet Harbor,	Halifax	do	do	"	60,000
Kentville,	King's	do	do	"	70,000
					1,210,000

Making a total of 1,210,000 semi-hatched ova disposed of in the month of April. At the same time I conveyed to these hatcheries their usual supplies of partially hatched salmon, as follows: Lochaber, 100,000; Tusket, 40,000; Sheet Harbor, 40,000—or a total distribution at that date of 1,390,000 ova, leaving the balance of 3,720,000 in the troughs of this establishment.

With the salmon and whitefish ova the most satisfactory success was met with in their hatching; and while at Lochaber, Sheet Harbor and Kentville the percentage of salmon trout hatched was fully up to the average, some losses were met with at Kempt, Tusket, and at this hatchery.

I have as yet been unable to solve the difficulty heretofore experienced in hatching the ova of the salmon trout in the water with which this hatchery is supplied, but from the results obtained at the different temporary hatcheries, and noting the temperature and condition of the waters at these points, I am led to believe that in some way to those features the loss is attributable. During the next season I propose instituting such observations at these small temporary hatcheries as will be likely to throw some light on the subject.

Notwithstanding the partial failures to which I have alluded, I would respectfully urge upon your Department the advisability of continuing the effort to stock the numerous lakes of this Province with these fish. Considering the number and extent of these inland waters and their apparent adaptability for supporting fish life, the extent, magnitude and commercial importance of which this prospective fishery is capable, a much more decided effort in future would be warranted, and to this end each of the counties in the western portion of this Province should be provided with an auxiliary hatchery. These could be built at but slight expense; being used only during the spring months they need not be so substantially constructed as this building, and the cost of working them would not exceed $100 per year. They could be so arranged that a considerable number of whitefish could be hatched at the same time, and they could also accommodate a number of salmon ova, and thus materially assist in the economical prosecution and extension of the work to which this institution has been particularly devoted. Such hatcheries as I refer to, capable of hatching 4,000,000 or 5,000,000 of whitefish, 200,000 salmon-trout, and a similar number of salmon ova, could be erected at a cost not exceeding $600.

Distribution of Fry.

The distribution of fry from this hatchery for the past year, including the semi-hatched ova already mentioned, was as follows:—

Salmon Fry.

Musquodoboit River,		Halifax County	40,000
Sackville	do	do	20,000
Nine Mile	do	do	40,000
Pennant	do	do	20,000
Little Salmon	do	do	20,000
Ecum Secum	do	do	40,000
Salmon	do	Colchester County	40,000
Stewiacke	do	do	40,000
Wallace	do	Cumberland County	40,000
Philip	do	do	40,000
West	do	Pictou County	40,000
East	do	do	40,000
Middle	do	do	40,000
Gaspereau	do	King's County	40,000
Cornwallis	do	do	40,000
La Have	do	Lunenburg County	40,000
Gold River,		Lunenburg County	20,000
Middle	do	do	20,000
East	do	do	40,000

Annapolis River,	Annapolis County			40,000
Round Hill	do	do	do	40,000
Tusket	do	Yarmouth	do	40,000
Lochaber	do	Antigonish	do	100,000
Roseway	do	Shelburne	do	20,000
Total salmon fry				900,000

Salmon-Trout Fry.

Lochaber Lake,	Antigonish County			120,000
Gaspereau	do	King's	do	70,000
Little River Lake,	do		do	20,000
Rossignol	do	Queen's	do	100,000
Tusket	do	Yarmouth	do	60,000
Sheet Harbor	do	Halifax	do	60,000
Hubley's	do	do	do	20,000
Total salmon-trout fry				450,000

Whitefish Fry.

Grand Lake,	Halifax County			500,000
Hubley's	do		do	200,000
Williams' Lake			do	200,000
Governor's	do		do	200,000
Sandy	do		do	200,000
Lochaber	do	Antigonish County		300,000
Rossignol	do	Queen's	do	500,000
Gaspereau	do	King's	do	200,000
Milford	do	Annapolis	do	200,000
Total whitefish fry				2,500,000

Totals.

Salmon	900,000
Salmon trout	450,000
Whitefish	2,500,000
Grand total	3,850,000

I am able to report that this work was performed with almost perfect success, no loss being met with, except among one lot, which I was ordered to take to the Roseway River, in Shelburne County. Knowing the difficulties to be encountered on such a long journey by steamer I took every possible precaution to avoid loss. I provided six large casks of water, and so arranged the barrels containing the young fish that a stream of water could be kept passing through them. Owing to rough weather and detention by fog, Shelburne was not reached until the following morning, over twenty hours after leaving Halifax, and my supply of ice and fresh water being exhausted, I met with considerable loss of fry.

I would respectfully suggest that if any further attempts to stock the rivers of Shelburne County be contemplated by your Department that a small auxiliary hatchery be erected at Shelburne town, to which the ova could be taken some time before hatching with perfect safety, and from which the young fry could be readily conveyed to the different rivers. The rivers of Lunenburg County, which I have been endeavoring to re-stock for some years past, owing to their great distance by road from this hatchery, have not been served as generously or successfully as their

importance would warrant, and I would suggest that a small hatchery be erected at some central point in that county. The same plan should also be adopted in Digby and Annapolis counties. The very marked increase in the salmon fisheries of this Province since the introduction of fish culture, as shown by the fishery statistics, and which I endeavored to demonstrate to your Department in my annual report of last year, should warrant the work being undertaken on a much larger scale than at present.

It can be justly claimed that fish culture has passed through the experimental stage, and has established itself as a practical art, upon which any expenditure made will give satisfaction and highly remunerative returns. The continual decline in the salmon fisheries of the Province up to the year 1882 clearly demonstrates the fact that in the present condition of our rivers the natural reproduction is quite insufficient to maintain the supply, and that to retain our present stock in the presence of the continuously increasing demand, more hatcheries are necessary, and all parts of our coast should receive a bountiful supply of young fry annually.

The almost universally expressed desire of those of the inhabitants of the western counties of this Province with whom I have come in contact for the extension of the fish cultural operations of your Department prompts me to respectfully urge upon you compliance with their requests, and the introduction of such appliances as will enable us to produce such a number of young fry as will bear a reasonable proportion to the natural reproduction of past years.

If I might be permitted to offer a suggestion in reference to the extension of fish cultural operations, I would say that probably the most economical manner in which an increased output would be effected would be to enlarge the hatching capacity of this institution to the desired extent, make this the general depôt from which the auxiliary hatcheries located in such counties as are beyond the scope of this establishment, could receive their supplies of semi-hatched ova each spring.

The work of collecting the ova for this larger institution and the necessary care to be given them during the winter months would be obtained at very little over the cost of the present work, while the final hatching and the distribution of the fry from these points could be performed by the overseers or wardens of the districts at a cost not exceeding $100 per year.

Collection of Ova.

In the work of capturing a supply of parent fish from which to procure a stock of ova for this season's operations I was very successful. Having obtained permission from your Department to operate on the Musquodoboit River, on the 1st September I engaged the fishermen and put them in charge of the trap, which had been placed in the natural pass around the dam at the mouth of the stream. Very dry weather having set in about that time the river became so low that no fish could enter—in fact, during the greater part of September no water passed through the ladder. In the mean time large numbers of salmon congregated in the pools below the dam, and early in October, when the first freshet occurred, they commenced to ascend the pass, where they were captured in the trap. In this way a large number were taken, but as the water fell off again rendering this trap useless, I was obliged to resort to setting a net in the pools below. Altogether 270 salmon were taken from this river and conveyed by means of water-tight boxes to a raceway about one mile distant, where a tank and spawning shed was provided. Here they were eventually shipped and returned to their native stream. Permission was also obtained from your Department to operate upon the West River, in Pictou County, but at this point it was not as successful as in former years.

As in the Musquodoboit River, low water also prevailed during the season when salmon usually enter this river, and the fish were obliged to remain in the tidal waters, where I have reason to believe large numbers were caught by the inhabitants. The catch by the fishermen amounted to 67 fish in all at the West River.

The total catch from these two rivers amounted 337 fish, as follows : Musqudoboit River, 82 males, 188 females; West River, 24 males and 43 females. Of these 231 were females, producing about 2,300,000 ova. The loss up to the present time has not exceeded the usual percentage, and as the embryos are now visible in the greater portion of them, the prospects of a successful hatching are favorable.

I beg to report that the hatchery and all its appliances are in good condition, and no extraordinary outlay will be required during the next year.

I have the honor to be Sir,

Your obedient servant,

A. B. WILMOT,
Officer in Charge.

4.—DUNK RIVER HATCHERY.

PROVINCE OF PRINCE EDWARD ISLAND.

Not running in 1889. *See* summary (4).

5.—ST. JOHN RIVER HATCHERY.

PROVINCE OF NEW BRUNSWICK.

Report of the Officer in Charge of the St. John River Hatchery. 1889.

SIR,—I have the honor to make the following report on the operations of the St. John River fish hatchery for the present year.

In order to give an intelligent account of the work it will be necessary for me to state that in the autumn of 1888 I was informed by the Deputy Minister of Fisheries that it was not the intention of the Department to take any parent salmon on the Tobique River that year, out that this hatchery would be supplied with ova from the Restigouche nursery; consequently, there were no eggs put in this house the first part of the hatching season. However, in the month of March I received from the Newcastle and Sandwich hatcheries, in Ontario, by the hands of Mr. Charles Wilmot, 3,000,000 whitefish and 1,000,000 salmon-trout eggs; and on the first day of May I got another consignment of 150,000 Restigouche salmon eggs from Mr. Alexander Mowat, making in all 4,150,000 fish eggs of the different species above named. They were all received in fair condition. The only loss sustained was with a few of the Restigouche eggs, which hatched out prematurely, on account of the lateness of the season when they were transferred. With this exception the different classes of eggs did very well and a large percentage hatched out.

On the 5th of April I commenced the distribution of whitefish fry, a labor that is fraught with a great deal of hardship, owing to the very bad state of the roads at that season of the year. On the 5th of June I started to distribute the salmon-trout and salmon fry, and finished planting the entire lot on the 4th day of July. The work was successfully performed, without any appreciable loss of young fish, notwithstanding the long distances that the majority of them are carried. They were apportioned amongst the Counties of Victoria, Carlton, York, Sunbury, Queen's King's and Charlotte. Below I give a tabulated statement of the several localities in which I planted the different kinds of fry, the quantity put into each, the name of the river, lake or stream, and the distance in miles that each lot was carried, and the mode of conveyance.

Whitefish Fry Planted and Distance from the Hatchery.

	No.	By rail.	By waggon.	Miles.
Magaguadavic Lake, York Co.	350,000	....	...	128
Harvey do do	350,000	....	...	138
Oromocto do do	350,000	138	10	148
Lakeville Lake, Carleton Co.	350,000	46	13	59
Skiff do do	350,000	97	7	104
Foster do Charlotte do	350,000	145	...	145
Portage do Victoria do	200,900	....	7	7
Long do do do	300,000	....	9	9
Total.....	2,600,000			738

Salmon-Trout Fry Planted and Distance from the Hatchery.

Lakeville Lake, Carleton Co.	106,000	46	13	59
Skiff do York Co.....	140,000	97	7	104
Harvey do do	150,000	138	...	138
Chamcook do Charlotte Co.	150,000	157	...	157
Foster do do	120,000	145	...	145
Long do Victoria Co.	90,000	...	9	9
To a Mr. Thompson, Woodstock, Carleton County.....	36,000	...	...	...
To Fishery Overseer Burt, Hartland, Carleton Co.....	30,000	...	...	...
Run out at the Hatchery about	8,000	..	...	...
Total.....	830,000			612

Salmon Fry planted and Distance from the Hatchery.

Lake Alva, Kings Co.....	30,000	By rail	190	Waggon	7	197
Washademoak River, Queen's Co.....	25,000	do	210	Steamer	65	275
Salmon River, Queen's Co.	25,000	do	210	do	70	280
Oromocto, North Branch Sunbury Co.....	25,000	do	135	Waggon	10	148
St. Croix River, Charlotte Co.....	25,000	do	132	Boat	2	134
St. John River, Victoria Co	10,000		....		..	....
	140,000					1,034

Recapitulation—

Whitefish fry.....	2,600,000	Miles travelled.	738
Salmon Trout.....	830,000	do	612
Grand total.....	3,570,000	do	2,384

I respectfully desire to inform you that in transporting the young fry such long stances as I am compelled to entails a vast amount of care and necessitates a heavy xpenditure to perform the work in compliance with my instructions.

There is a redeeming feature in connection with the work, that the applicants e delighted to get the young fry; but there is a special preference for the salmon y, particularly for waters where sport is the object in view, but where the fish are quired for food purposes the people are well pleased to see the salmon trout and hitefish introduced in the lakes, although they know very little about this class of

fish; but I have endeavored to explain to them their quality and usefulness as a food fish. Some very fine specimens of the salmon trout were caught by Doctor Gove and another gentleman from St. Andrew's, in Chamcook Lake last summer, weighing from three to seven pounds. I was also informed that salmon trout were taken by some of the New Brunswick railroad employés in Williamstown lakes, and no doubt both salmon-trout and whitefish were caught in other lakes. Some of these lakes are held by lessees, who will not permit outsiders to fish them, nor will the proprietors allow net fishing. It is, therefore, difficult to ascertain what quantity of these fish have matured in these waters.

Last autumn I got instructions by your Department to proceed up the Tobique and Serpentine rivers, with the view of capturing parent salmon to stock the nursery. When I arrived at the spawning grounds on the Serpentine I found scarcely any salmon there. I caught a few, but they had already spawned. I then abandoned the work and returned at once, in order to avoid expenses, being fully convinced that it was useless to spend time so late in the season.

I was not unprepared to find the salmon scarce on the Serpentine, for on my way up I was informed that the lumber drive on that river was kept back last spring for the want of water to take it down; consequently, I was satisfied that if there was not water enough to float the lumber down there would not be sufficient water for the fish to get over the falls, as no salmon can ascend the several falls that are upon it except in the hight freshet in the spring. I learned from all the information that I could gather that the salmon are slaughtered by every conceivable means that the poachers could invent, even to dynamite. There seems to have been no protection for the salmon on the Tobique waters last summer, and if some authority does not take the matter in hand to protect this river the salmon will soon be as scarce on the Tobique and its tributaries as they were before the artificially hatched fry were first planted in them.

Parent Salmon.

It is much to be regretted that your Department does not come to a final conclusion to have the parent salmon for this hatchery taken in the St. John harbor. I cannot see any valid objections against the scheme, but on the contrary there is good reasons for adopting it. In the first place, a sufficient number of fish would be caught every year; in the second place, it would be the most certain and economical plan; and in the third place, it would be the most prudent system for the improvement of the St. John River fisheries. The eggs taken from the salmon now caught in the harbor for food purposes would be saved and hatched in the nursery, for the benefit of our waters, and the parent salmon would also be saved and liberated alive, whereas at present both the salmon and their eggs are wholly lost to the river.

I understand that some objections have been raised by certain parties against using the Carleton Pond, in St. John, as a safe resevoir for the salmon until they became ripe for spawning. The Superintendent of Fish Culture should be good authority on this point, and his opinion is that the pond in question could be made suitable at trifling expense for the purpose named. At any rate, some convenient place above or below the falls at Indiantown (St. John) should be provided, so that salmon when caught in the harbor could be put into scows and carried to the place and then safely kept till the spawning time, the same as is done at the Restigouche, Miramichi and Tadoussac hatcheries. At Bucksport, below Bangor, in the State of Maine, the Americans tow their parent fish from 6 to 8 miles with row boats from their nets to the shore; they are then taken some distance up a river to their reservoir. I would respectfully request your Department to give this your serious consideration, as it is absolutely necessary that some such scheme should be adopted for supplying this nursery with salmon ova in the future. Both salmon and speckled trout fry are in great demand by the people here and in the adjoining counties, and I have to request your Department of Fisheries to make full provision to supply these wants of the inhabitants. Very little repairs have been made about the house the past summer, although some were much needed, but the frequent admonitions not to incur expenses

coming from the Departments has deterred me from making necessary repairs. The floor of the hatchery where the tanks are placed is in a bad condition. It is now 9 or 10 years old, and being constantly exposed to wet and dry weather, decay has set in. The platform outside the door is also in a most dilapidated condition, and the plaster on the walls requires repairing. These and other minor matters must be attended to next summer.

Respectfully submitted,

CHAS. McCLUSKEY,
Officer in Charge of St. John River Hatchery.

6.—MIRAMICHI HATCHERY.

PROVINCE OF NEW BRUNSWICK.

Report of the Officer in Charge of the Miramichi Hatchery for 1889.

I herewith submit my annual report upon the operations in connection with this hatchery for the past year. The eggs laid down in the hatching troughs on the 1st December, 1888, received the closest attention during the winter months, and I am pleased to state a very small loss was met with. In addition to the ova collected from parent salmon on this river, I received 50,000 "eyed eggs" from the Restigouche hatchery. Every exertion was made to have the young salmon hatched from these eggs planted as far up the streams as possible, and on the grounds best adapted for them to grow.

Following is a list of the rivers, with the numbers of fry planted in each, viz.:—

North-West Miramichi (native fry)	400,000
do (Restigouche fry)	30,000
Stony Brook (Restigouche fry)	20,000
South-West Miramichi (native fry)	50,000
Little South-West Miramichi (native fry)	240,000
Sevogle (native fry)	100,000
Stewart Brook	10,000
Total	850,000

I was very successful in the work of distribution this season, the weather being cool and favorable. Thirty thousand of the Restigouche fry were planted at the request of the Hon. Mr. Adams on the North-West Miramichi, a distance of about 45 miles up river by the road and nearly 75 by the river. The upper 22 miles of this road is only a portage, and required the greatest care to be taken in the carrying of the fry safely to this destination.

The remaining portion of the Restigouche fry, along with the 800,000 native fish, were planted as far as possible up the streams to which access was most easily gained.

I would here respectfully ask that a quantity of whitefish eggs be forwarded from some of the Ontario hatcheries to this nursery, the product of which I propose planting in the lake about seven miles distant from this establishment. I am of the opinion that this body of water would be well suited for this fresh-water fish. This lake is now almost destitute of fish of any kind, except some perch and a few lake trout. If the hatching and planting were successful, and as the growth of fish could easily be ascertained from time to time, it would be the means of introducing another valuable fish now altogether unknown in our waters.

In order to illustrate the benefits which must be derived from artificially-bred fry being planted in small streams which empty into the large rivers, and to refute other statements that are sometimes made by persons who decry the worth of fish culture, let us take the small stream which runs into the Miramichi River and supplies this hatchery as an example.

Previous to the erection of this hatchery not a salmon, smolt, or parr was to found in it, and what do we find now? Towards the latter part of August and 1st of September it was literally alive with young salmon, which are the results of planting in it eight or ten thousand fry every season. The small pools swarm with these young salmon, and hundreds could be taken with hook and line. When this result is obtained in this small brook (where any one can satisfy himself of the fact if he desires it) in which trout and other fish are also plentiful, and where the temperature and quality of the water does not differ materially from the up-river streams in which the fry are annually planted from this hatchery, then why should not this one simple fact give the strongest evidence of similar success attending the planting of the many thousands of fry from this hatchery into all the branches of the Miramichi for years past? But then there are designing persons who always oppose any progressive work, and who are so closely set in their own opinions that they will neither fairly consider nor inspect the workings of these *public* institutions, but prefer to circulate misleading statements and reports, which have no foundation whatever but in enmity. Look at the senseless fabrication which appeared some time ago in the columns of one of the local papers: "That thousands upon thousands of young salmon fry were found dead along the shores of the river." And this was sixty miles below the place where they were planted. When the successful results that I have pointed out can be attained in this little stream, why should it not be the same in similar streams up river? Where is the supply coming from if the product of naturally-deposited ova is not greatly augmented by these artificial means? Even the salmon, that may reach the spawning grounds, after having passed poachers' nets and other difficulties, will deposit their ova where ice, freshets, frost, and all the other elements may make war upon them. What has become of the ova naturally deposited this season, and what return can be expected from these eggs after 3,000,000 feet of lumber has been driven over the beds, besides two heavy freshets, accompanied each time by running ice? This occurs nearly every season in our rivers, and surely must destroy the greater number of naturally-laid ova. But still the salmon are not decreasing in the waters, although the fishermen are enlarging their operations and employing all the means they can to exhaust them. Nets are placed upon nearly every available stand upon the river, and salmon fishing was just as remunerative during the past season as for any time during the previous five or six years. The majority of fishermen believe this to be the beneficial results of artificial breeding. These fishermen and dealers—who take an interest in keeping the supply equal to the demand—plainly see that if there was no other resource besides the natural one their business would soon be a failure, and the enterprise and activity which this industry now creates would have to be directed into other channels in order to be remunerative.

Why is our striped bass fishery completely exhausted; and why is our smelt fishery yearly decreasing? The answer is plain—the natural supply cannot equal the enormous drain that is put upon it year by year,—alongside of the startling facts that the bass fishery is depleted, and the smelt fishery yearly decreasing—how favorably can the salmon fishing be compared, when it is known that it was better this season just passed than it was six years ago. Some of the fishermen in tidal waters say they have not taken as great a number of salmon this season as others, but they account for this falling off in the following manner: springtime set in about three weeks earlier than usual, and naturally the salmon entered the rivers at a much earlier date than other seasons—so early, in fact, that but very few fishermen had their nets or rigging in readiness to take the first run—while those men who owned fishing stands further up river, and who had their nets set before the run reached them—claim that, they caught more fish by the last of May than they would, other seasons, up to the last of June.

The fall run of salmon did not enter the rivers until October. There were some very large fish, and some of the fishermen are of the opinion that these large fish are the results of planting Restigouche fry in these head waters. Grilse were also very

plentiful, some of the up-river pools being literally alive with them about the latter days in September and first of October. Then the fishermen engaged to procure parent salmon for this house were seining in these pools; they have taken as many as a hundred and more of these young salmon at one sweep.

When the enormous drain upon our salmon fishery is considered—the almost endless number of nets from the mouth of the bay to the rapids—which are year by year doing a remunerative work—along with the facts that the waters are abounding with "parrs" "smolts" and "grilse"—it points to the conclusion that artificial hatching is the feeder that keeps up this supply, and is one of the greatest boons and benefits that can be granted to the fishermen of any river,—certain it is that, the natural sources could not supply the enormous demand—men of all opinions agree in this—and I may here add that the uniform good catches of fish for the past five years are now convincing the most skeptical of fishermen that the artificial breeding is most beneficial, as supplementing the products of natural-laid ova with millions of healthy—artificially bred fry—which are the surest safeguards against the depletion of our waters of these most valuable fish in future years.

Collection of Parent Salmon.

The work of collecting ova has been more successful this season than for the previous three or four years. The work was commenced about the first of September, but owing to extreme low water, very few salmon entered the River until the 25th of that month. Then there was a slight rise of water caused by heavy rain, which greatly lowered the temperature of the stream, in consequence of which great numbers of salmon and grilse which had been lying in the lower tidal waters began to ascend the upper parts of the rivers. As no wardens were appointed—until two weeks later—to guard the districts immediately below where our operations are carried on the poachers held full sway, and a great number of breeding saimon must have been destroyed by them. Therefore, our men did not meet with as great success as was expected. Then, again, when the guardians had been appointed, and when our men were doing good fishing, a large drive of lumber, which had been left at the heads of the streams since spring, came down with the high water, and our operations had to be suspended for five days, which caused us to lose part of the best run of fish. We succeeded, however, in capturing 261 parent salmon on the North-West and Little South-West Branches; and the man whom I had previously engaged procured 32 fish on the Big South-West Branch. Male fish predominated very largely. In some instances the men had to liberate as many as 100 or 150 grilse and male fish from the nets on one seining ground. Some of the female fish were very large, and the number of ova taken from each was above the usual average for our salmon of this river; quite a number of very small females were also taken.

The number of fish taken from the North-West Branch was 141, from the Little South-West 120 and from the Big South-West 32, making a total of 293 parent fish. Of these, 153 were females, from which I gathered 1,100,000 ova, giving an average to each fish of about 7,190 eggs.

In conclusion, I may say that this hatchery and its appliances, retaining ponds, etc., are all in good order, and I am pleased to state the ova is progressing favorably, and there is every appearance of a good crop of fry.

I am, Sir,
Your obedient servant,

ISSAC SHEASGREEN.

7.—RESTIGOUCHE HATCHERY.

PROVINCE OF QUEBEC.

Report of the Officer in charge of the Restigouche Hatchery for 1889.

I beg to lay before you a detailed report of the operations carried on at the Restigouche hatchery during the past year of 1889.

From the crops of eggs obtained last year, 1,280,000 fry were successfully hatched and distributed in good condition in the several streams, as follows:—

Restigouche River, from Indian House to Tracy Brook, including Brook, and 41 miles from hatchery	480,000
From Tracy Brook to Kedgewick, 50 miles from hatchery	200,000
Upsalquitch River above the Great Falls, 20 miles from hatchery	200,000
Restigouche River, from hatchery to Patapedia, including river, 20 miles	200,000
Metapedia Lake, 50 miles from hatchery	100,000
Metice River, 150 miles from hatchery	100,000
Total fry	1,280,000

Besides the above number of fry, 200,000 eyed eggs were distributed from the hatchery as follows:—50,000 were conveyed to the Miramichi establishment in the latter part of April, and 150,000 were conveyed at the same time to the St. John River nursery, all of which were deposited in the establishments in fine condition.

Distribution of Fry.

The distribution of fry began the 10th of June, and lasted until the 26th. The fry distributed in the Restigouche and its branches were all towed in large cribs 30 feet long by 3½ feet wide and 15 inches deep, divisioned off and so arranged that any desired supply of pure fresh water could flow amongst the fish while on their journey. In this way the little fish were kept healthy and lively until they reached their destination, and they are allowed to gradually drop out through little gates in the scows as they are being towed along at the rate of three or four miles an hour, and in this way they are distributed all along the river.

The fry distributed in the Metapedia Lake, and Metice River were conveyed in cans over the Intercolonial Railway. They were very lively when liberated, and hid themselves among the stones and moss immediately.

Net at Island to capture Parent Salmon.

Owing to the very early spring this net was set out in May, it being two weeks earlier than usual, and I am able to give a very satisfactory report on this important branch of the work, and herewith is given the catch of this net in detail:—

	No. of Fish.	Weight in lbs.
May, 30	2	40
do 31	4	80
June, 1	6	120
do 2	7	140
do 3	11	220
do 4	21	420
do 5	7	140
do 6	7	140
do 7	14	280
do 8	8	160
do 9	16	320
do 10 (Nets lifted to clean.)		
do 11	15	300
do 12	8	160
do 13	24	480

June	14	14	280
do	15	21	420
do	16	16	320
do	17	13	260
do	18	33	660
do	19	8	160
do	20	17	340
do	21	5	100
do	22	9	180
do	23	19	380
do	24	5	100
do	25	11	220
do	26	11	220
do	27	9	180
do	28	8	100
do	29	5	100
do	30	3	60
July	1	37	540
do	2	12	240
do	3	4	80
do	4	4	80
do	5	5	100
do	6 (Nets lifted to clean.)		
do	7	3	60
do	8	1	20
do	9	4	80
do	10	6	120
do	11	4	80
do	12	2	40
do	13 (Nets lifted on account of freshet.)		
do	14 do do		
do	15 do do		
do	16	3	60
do	17	2	40
do	18	1	20
do	19	2	40
do	20 (Nets lifted to clean.)		
do	21	2	40
do	22	1	20
do	23	1	20
do	24	1	20
do	25 (Nets lifted.)		
do	26	1	20
do	27	1	20
do	28 (Nil.)		
do	29	1	20
do	30 (Nil.)		
do	31 (Nil.)		
Aug.	1 (Nil.)		
do	2	2	40
do	— Grilse	28	84
		475	9,024
	Purchased from McAdams net	79	1,580
	Caught in Mission net	30	600
	Total	584	11,204

Some 70 of these fish, from injuries received in the nets and in towing them to the reservoirs, were useless for spawning purposes; those which were not affected with fungus were sold and accounted for.

Manipulation of Fish

The work of spawning the fish began on the 15th October and lasted till the 10th of November; 512 fish were found in the reservoir—259 females and 253 males. From these were collected 3,022,000 eggs, which were packed in moss and conveyed some 15 miles up river to the hatchery by scows at various times during the spawning period. A small loss occurred in conveying the last batch to the hatchery, from the roughness of the road. The eggs in the hatchery at present are looking very well, and there is every reason to believe there will be a very successful hatching. But it will be necessary that a large number of the eyed eggs should be removed to some of the other establishments, to prevent overcrowding of the fry in the spring.

Repairs to the Retaining Pond.

As the instructions to build the block piers mentioned in my report were not received until too late in the season, the pond was only fitted up in a temporary way. It was also too late to obtain the necessary screen netting that was needed, the factory where it is made having closed down before the order was received.

To carry on this work successfully another year three small block piers will have to be built, and one hundred yards of fine mesh screen netting obtained. The old wire screens have been in use for four or five years, and they have become so decayed as to be unsafe and useless.

Repairs to Cribs and Plant Required.

The cribs for transporting the fry will need to be repaired, and one new one built. It will be necessary to get fifty fathoms of new small mesh net, also to put both fishing stations in good condition.

General Remarks.

The several letters obtained from net fishermen and others holding angling property on the Restigouche, hereto appended, are conclusive evidences that the salmon fisheries on the Restigouche and the Bay are in a very healthy condition and are improving. Some large catches among the net fishermen were reported; one party caught sixty and seventy at one tide, with an average weight of twenty-three pounds. With conversations had with some parties owning nets on the coast below Dalhousie, they told me they made very fine fishing this season. Many of the anglers made excellent scores. Mr. Rogers and his friend, in two weeks angling at the mouth of the Kedgewick, killed 100 salmon. I have not been able to ascertain the correct angling catch, but from information gathered from fishery officers and guardians the angling catch on the Restigouche and its tributaries was about 1,400 salmon. Angling in the latter part of the year was poor. Owing to the continuous dry weather the water in the river became so low and warm the fish would not rise to the fly.

The river was literally teeming with young "parr" and "smolt" this season. The rod fishermen complained of them as being a nuisance when angling for salmon. I have seen and conversed with many of the fishery officers and guardians, some of whom were forty miles up the Kedgewick, and with others stationed along the River in various places, and they all say they never saw more fish in the river than there was this fall. The scowmen, who have been towing seventy and eighty miles up the river, corroborate this statement and say all the spawning grounds and gravelly bars and shallows were overturned by the spawning salmon. Great numbers of fish spawned this season between the tide head and the hatchery, which is an unusual

occurence, and it is only of late years, and since the fish began to increase, that they spawned in this portion of the river at all.

A good deal of illegal fishing by drift nets and otherwise was reported having been carried on last season. It is to be hoped greater efforts will be made to stop this illegal fishing in the future.

I am, Sir,
Your obedient servant,

ALEX. MOWAT,
Officer in Charge of Restigouche Hatchery.

8.—GASPÉ HATCHERY.

PROVINCE OF QUEBEC.

Report of the Officer in Charge of the Gaspe Hatchery for 1889.

I beg to report on the operations of the Gaspé hatchery as follows:—

The management of this hatchery came under my control on the 13th of June last, upon the death of the late Philip Vibert.

The Department net was set on the 28th of May and taken up finally on the 6th August. One hundred and ten parent fish were taken, sixty-five females and forty-five males; all these fish were saved in good order, and not one was lost during the season. Owing to heavy freshets during the month of June the net had to be raised for some days.

I began planting the fry in the rivers on the 3rd of June, and had completed the distribution by the 21st of the same month. The fry were in good condition, strong and healthy.

The estimate of the number of ova placed in the trays last fall by Mr. Vibert proved to be below the actual quantity. The number of fry planted in June of this season is as follows:—

Dartmouth River, above the falls	250,000
do below do	100,000
York River	100,000
Total	450,000

I began spawning operations on the 1st October and finished the work by the 6th of November. I estimate the number of ova placed in the hatchery as follows:—

40	females,	averaging	14,000	560,000
20	do	do	11,000	220,000
5	do	do	8,000	40,000
65		Total		820,000

At present these eggs are looking well.

By your instructions I purchased a stove for the house at the reserve pond at a cost of $13.50. Scows, flats and cribs are all in safety for the winter. The trays and troughs were varnished in July and the interior of the hatchery was cleaned and aired, and everything is in good condition for the winter. The exterior of the building should receive a fresh coat of paint next season.

During the month of August the establishment was visited by the Hon. C. H. Tupper, Minister of Marine and Fisheries, who made a personal inspection of the property and ordered certain improvements and repairs which were accordingly made.

I beg also to report the following statements of facts in connection with the Gaspé nursery. Information is received from an old experienced canoeman, who has been employed the last twenty years by fly fishermen on these Gaspé rivers. He is a reliable man, and being well acquainted with him, his statement can be depended upon.

When he first became acquainted with the St. John River here in, 1870, he says the average weight of the salmon varied from 12 to 15 lbs.; that average continued up to the year 1880: But since that year there has been a continued increase in the size of most of the fish. In 1887–88, the average weight of the salmon taken in the St. John River ran up to 18 and 19 lbs., and in 1889 the average was 22 lbs. This is a most decided increase; and there has been salmon taken with the fly this season weighing 30 lbs.

The gill net fishermen of that river complain of losing many salmon this season by the meshes of their nets being too small. Now, all this goes to show that a very considerable increase has taken place in the size of the St. John River salmon, and the impression prevails that the cause of this increase is due to the work from this hatchery, and the canoemen say this comes from the numbers of young salmon which have been regularly put in the St. John River from the Gaspé hatchery, and hatched from the eggs of the larger breed of salmon belonging to the Dartmouth River. They say the form of these larger St. John River salmon resemble those of the Dartmouth, and that they enter the St. John two and three weeks earlier than formerly. These things certainly give good evidences of some benefits from the Gaspé nursery.

The reports from the York River are that a very great number of salmon were seen in the upper waters, and that a great quantity of young salmon were also seen in the estuary and tideway.

I cannot say much about the salmon in the upper parts of the Dartmouth River, but during the fall of 1885 I was up there and saw a great many parent salmon. In the year 1886 we planted fry above the falls; since that date I have particularly noticed a very great increase in the number of young salmon. The estuary waters of Dartmouth River this season were alive with little salmon of two and three years' growth; the greater number appeared to be "smolts," ready for their first migration to the sea.

In conclusion, I may say that before this hatchery was established the Gaspé Basin rivers contained few parent salmon; and "parrs" and "smolts," the young of the salmon, were not often seen, but at present all the rivers appear to be well supplied with parent salmon and their young. The latter are very numerous indeed in all the streams and in the estuaries.

I have the honor to be, Sir,
Your obedient servant,

HENRY DAVIS,
Officer in Charge of Gaspé Hatchery.

9.—TADOUSSAC HATCHERY.

PROVINCE OF QUEBEC.

Report of the Officer in Charge of the Tadoussac Hatchery for 1889.

I herewith submit my annual report of the operations connected with the fish hatchery under my charge. From the eggs laid down in the fall of 1888 there were successfully hatched 1,600,000 young fry, which were planted in the following rivers and lakes:—

Ste. Margaret River, N.-W. Branch	100,000
do do N.-E. Branch	300,000
St. John River	300,000

A Mars River	200,000
Little Saguenay River	100,000
Ste. Anne River "Côte Beaupré"	20,000
Mowat's Lake	450,000
Hatchery Lake	130,000
Total	1,600,000

All these fry were distributed in the best condition, every river receiving its complement. By the order from the Department no more fry will be planted in the Ste. Margaret River, and I hope a similar order will be given for the Little Saguenay River, as both rivers are considered unsafe for the salmon fry, on account of the enormous quanties of trout in them. The first consideration in the planting of fry should be their safety, and they should be taken as far up as possible to the head waters of the river at the head of the Saguenay.

Immediately after the distribution of the young fry the building was cleaned and ventilated. The improvements made in this house this year were very small, only repairing a certain number of troughs, and varnishing them and the taps ; but the repairs necessarily required and mentioned in my report of 1888, estimated at a cost of $500, are now most urgent. The part of the building occupied for the hatchery is in a dangerous state. If the Department considers the sum of $500 too much to expend on the present old building, which stands on a wharf of slabs, and on that account being always a cause of trouble, with increasing expense, a new hatchery with stone foundation could be put up on the rock close by, on the stream which supplies the present house, which could be built for about $1,200. A good deal of the old building could be used, such as windows, doors and boards for covering the roof under the shingles.

Capture of Parent Salmon, 1889.

We caught in the Government nets 559 salmon ; 310 were kept for breeding purposes, and 249 were liberated again, keeping only the largest sized fish. Those that were liberated were nearly all of the same size. On one occasion there were 70 salmon taken—the best tide of the season ; of that number 42 salmon were put back in the water. The uniformity of size was very remarkable in these fish. During the whole summer we lost only one female and one male. Their cause of death was unknown, thus leaving 206 females and 102 males for manipulation. The 206 females were of large size and gave 2,557,000 ova. The eggs were all laid down in the hatching trays in good condition. The work of spawning commenced on the 21st of October, and was completed on the 9th of November. All the parent fish were retained in the pond after being stripped, and in a healthy condition. Residents of the place were invited to see them liberated. The Mayor of Tadoussac, J. E. Caron, Esq., and many others, saw that the salmon were as lively as before manipulation. No loss occurred in the spawning of the fish.

Very few smolts came down from the Hatchery Lake this season, on account of the dryness of the summer and fall ; the water of the lake did not flow over the dams as usual. It is not desirable to put as large a quantity of fry in this little lake as formerly, for in a dry summer the water does not flow over the dams ; and the young fish cannot get a free passage to the salt water ; and for the last two years the trout have been encreasing enormously in the lake. I would only advise the planting of a small number, only to show to the public how they grow and what they are like.

A lake like Mowat's Lake is far better adapted to receive a large quantity of fry. This lake has a good stream running from it to the salt water. In July last I went down to this lake with my nephew, son of J. A. Gagné, Esq., ex-M.P., and now Judge. We caught young salmon of one, two and three years. The first planting of fry was in 1886 ; they were of the size of 4, 8 and 12 inches for the three years. It was a matter of the greatest satisfaction to see the great number of young fish that were jumping at the fly. On one occasion I permitted the Bishop of Chicoutimi

to fish in the hatchery lake. He was accompanied by the Rev. Mr. Mathieu, Superior of the Quebec Seminary, and the Rev. Mr. Lemieux, of Tadoussac; they were astonished at the number of young salmon that could be caught.

Increase of Salmon.

In my report of last year I said that there was a steady increase of salmon in my district. I am happy to state that for this season, with the same number of nets, the salmon fishing shows an increase of over 50 per cent. above last season, and the percentage would, no doubt, have been much better if there had not been so much time lost by repeated gales of winds, and the breaking up of the nets so often. I may also mention that we have taken nearly 300 per cent. more salmon with the same number of nets this season than we did in 1886—the first year of my taking charge of the Tadoussac hatchery. Salmon have been seen, and some were caught for the first time as far up as the River Shipshaw, about eighty-five miles from the mouth of the River Saguenay, and ten miles above the town of Chicoutimi. It is the opinion of many people in Chicoutimi that these salmon are the product of the Tadoussac hatchery. The editor of the *Progrès du Saguenay*, of the 26th of September, says: "One of the strongest evidence in favor of the Tadoussac hatchery is the fact that great quantities of smolts, of good size, have been seen at the entrance of rivers where there were none before." After this had been written, a gentleman from Ste. Anne du Saguenay, Mr. Joseph Villeneuve, when fishing for Winninish, caught a splendid salmon of 18 lbs. in the river Shipshaw; and another gentleman of the town of Chicoutimi, Mr. François Guay, caught another salmon of 8 lbs., close to the entrance of River du Moulin, in the town. I have been told the several salmon rivers are well stocked with salmon, but I cannot give full particulars, as the local guardians have not answered my enquiries regarding any of these rivers.

As an evidence of the salmon growing to a good size in the lakes where they were planted, a hunter of the name of Herménégilde Otis, whom I know well, when fishing trout to bait his traps caught in Lake de la Boule, through the ice, a salmon of 2 feet 9 inches long, and saw another one caught in the same lake by one of his friends of about 3 feet long. He knows that others have been taken, but he did not see the salmon. These are the fruit of some salmon fry planted by the late Mr. Radford in that lake.

I have received by the last mail a letter from Mr. I. D. Guay, proprietor of the newspaper *Le Progrès du Saguenay*. I send you a copy of his letter and a certificate of Mr. Guay, the gaoler of Chicoutimi, about some salmon caught in and around Chicoutimi. It is the first time that salmon have been seen above Ha! Ha! Bay, and they all give credit to the Tadoussac hatchery for the appearance of these salmon.

I have the honor to be, Sir,
Your obedient servant,

L. N. CATELLIER,
Officer in Charge Tadoussac Hatchery.

(*Translation.*)

Chicoutimi, 15th December, 1889.

L. A. Catellier, Esq.,
Officer in Charge Tadoussac Hatchery.

Sir,—As you are on the eve of making and sending your annual report, I wish to draw your attention to the importance for the Department of Fisheries to plant salmon fry in many rivers above Ha! Ha! Bay. We have in the following rivers: River of Pelletier's Cove, River Valin, River Caribou, River Shipshaw, &c., &c., some places favorable for the artificial reproduction of salmon, and it seems to me that the Government should give you orders to plant salmon fry in some of them. I take the liberty of enclosing a certficate showing the fact that many salmon, quite enough, have been caught by chance at Chicoutimi. I know a gentleman named Joseph

Villeneuve, from "Terres Rompues," caught a salmon of eighteen pounds in the River Shipshaw, ten miles above Chicoutimi. I am not able for the present to send you the certificate of the gentleman in question. Good many facts come to confirm me in the good opinion I always had in favor of the fish breeding in Tadoussac. My own experience, and the reports made to me, make me believe that the Government must continue its work and place your hatchery on a good footing. There is room in Tadoussac for important improvements, that would be prized with satisfaction by all.

I wish to congratulate you on your success since you are at the head of the Tadoussac hatchery.

Believe me, dear Sir,
Your obedient servant,
(Signed) I. D. GUAY.

(Translation.)

I, the undersigned, certify by these presents, that I have myself caught a salmon of 8½ pounds in the River Saguenay a little lower than River du Moulin, and about one mile below the Government wharf, and I certify also that it is in my personal knowledge that two more salmon have been caught, one in the River Shipshaw and the other in the basin of the River Chicoutimi. The first one caught by Mr. Francis Mattais, and the second, a salmon of 20 pounds, caught by a man named Harvey.

(Signed) FRS. GUAY.

CHICOUTIMI, 12th, December, 1889.
Witness—I. D. GUAY.

10.—MAGOG HATCHERY.

PROVINCE OF QUEBEC.

Report of the Officer in Charge of the Magog Hatchery for 1889.

I herewith submit the annual report of the operations of the Magog fish hatchery for the year 1889.

From the eggs received from the Newcastle hatchery in March, 1889, I had the good fortune to hatch out 1,700,000 whitefish, and 1,100,000 salmon-trout fry, which were safely deposited in the following named bodies of water, to wit:—

Whitefish.

Oxford Lake, Brome and Sherbrooke Counties	400,000
Massawippi Lake, Stanstead County	200,000
Megantic Lake, Megantic County	100,000
Memphremagog Lake, Stanstead and Brome Counties	1,000,000
Total	1,700,000

Salmon Trout.

Oxford Lake, Brome and Sherbrooke Counties	250,000
Megantic Lake, Megantic County	100,000
Massawippi Lake, Stanstead County	125,000
People's Lake, Stanstead County	50,000
Lake Fortin, Beauce County	25,000
Lake St. Charles, Beauce County	50,000
Memphremagog Lake, Stanstead and Brome Counties	500,000
Total	1,100,000

On account of the forwardness of the spring and consequently the high temperature of the water the fry were successfully developed and deposited in the above named sheets of water a fortnight earlier than usual. Whitefish did especially well this season, the loss being comparatively small. The glass incubators working well, kept themselves free, by carying off all bad eggs. The hatching proceeded regularly and the fry were exceptionally strong.

The salmon-trout eggs I consider were above the average, and the mortality was slight until hatching time, when a slight loss was sustained.

There were no whitefish in any of the waters hereinbefore named previous to their artificial propagation in the Magog hatchery. At the present time they are seen in large numbers, but as netting and spearing are prohibed, and as they do not take the hook, but few have been caught.

Guardians of Memphremagog Lake (the largest sheet of water in the Province) inform me that during the close season last autumn the shoals were visited by a much larger number of salmon-trout than ever before. Black bass are still rapidly increasing; the spawning beds in June last were fairly alive with them. Two were caught last fall, weighing respectively 7 and 7⅞ lbs.

Illegal fishing still continues, and the cutting down of the appropriations the present season for guarding the shoals during the spawning season weakened the force of the guardians, and stimulated the feelings of poachers to break the law.

Repairs thus far have been slight but there now requires to be a new floor and underlays, the old one having become too much decayed by constant wetting to be safe. It will require about fifty dollars to put the hatchery in first-class condition.

All of which I most respectfully submit.

A. H. MOORE,
Officer in Charge of Magog Hatchery.

11.—NEWCASTLE FISH HATCHERY.

PROVINCE OF ONTARIO.

Report of the Officer in Charge of the Newcastle Establishment for 1889.

Herewith is submitted the annual report of operations carried on at this hatchery during the past year.

The fry distributed from this nursery last spring were liberated in excellent condition, notwithstanding the fact that a large proportion of them were subjected to long journeys.

The following detailed statement shows the number of semi-hatched eggs shipped to the different hatcheries in the Lower Provinces last winter; also the number and kinds of fry planted in the various waters of Ontario during the spring of 1889:—

Whitefish.

Lake Ontario, Newcastle	500,000
do Toronto	500,000
Bay of Quinté, Belleville	500,000
Lake Ontario, Port Hope	200,000
Georgian Bay, Meaford	200,000
do Thornberry	200,000
Lake White, Arnprior	100,000
Singleton Lake, north of Gananoque	100,000
Delta Lake do do	100,000
Couchiching Lake, Orillia	200,000
Simcoe Lake, Barrie	200,000
Total	2,800,000

Salmon-Trout.

Howard Lake, Toronto	50,000
Georgian Bay, Wiarton	300,000
Lake Ontario, Hamilton	100,000
do Toronto	100,000
do Whitby	100,000
do Port Hope	100,000
do Toronto	100,000
do Newcastle	800,000
Georgian Bay, Meaford	200,000
Crow Bay and Ely's Falls, Campbellford	100,000
Charleston Lake, North of Gananoque	50,000
Bay of Quinté, Belleville	100,000
Doctor Dean's Lake, Brighton	50,000
Rosseau Lake, Muskoka	100,000
Vernon Lake, Huntsville	50,000
Fary Lake do	50,000
Peninsula Lake do	50,000
Simcoe Lake, Barrie	100,000
Stoco Lake, Tweed	50,000
Humphrey's Lake, North Hastings	25,000
Nick's Lake do	10,000
Wilson's Lake do	25,000
Bear Shanty Lake do	25,000
Eagle Lake do	25,000
Total	2,760,000

Speckled Trout.

J. B. Thompson, Orillia	4,000
Henry Pellat, Orillia	4,000
Stanley Trout Club, Hagersville	5,000
William Henry, Niagara Falls	5,000
D. Martin, Guelph	2,500
Thomas Goldie, Guelph	7,000
G. W. Lawrence, Stratford	10,000
Samuel Grigg, London	5,000
Warren Tolton, Woodstock	20,000
R. C. Hulme, Belleville	4,000
Cyrus Teal, Wooler	4,000
George Hoar, Clinton	1,000
J. H. McCall, Vittoria	8,000
E. R. C. Clarkson, Toronto	10,000
Thomas Ford, Credit Forks	20,000
Mr. Gouin, Ottawa	10,000
S. Dice, Milton	6,000
R. J. Laidlaw, Hamilton	1,000
R. Southam, London	7,000
W. Myres, Orangeville	10,000
H. C. Dennis, Cobourg	40,000
Government Museum, Ottawa	3,000
Kept for pond at Newcastle hatchery	20,000
Total	206,500

Black Bass.

Howard Lake, Toronto	30,000
Thos. Elliott, Hampton	30,000
Ponds at Newcastle hatchery	20,000
Total	80,000

Salmon-Trout Eggs shipped to Lower Provinces in semi-hatched state.

Magog Hatchery, Quebec	1,200,000
Bedford Hatchery, Nova Scotia	500,000
St. John Hatchery, New Brunswick	1,000,000
Fishery Museum, Ottawa	20,000
Total	2,720,000

Grand Total.

Whitefish fry	2,800,000
Salmon-trout	2,760,000
Salmon-trout eggs semi-hatched	2,720,000
Speckled trout	206,500
Grand total of all kinds	8,566,000

Applications for Fry.

On account of the increased demand for speckled trout I am of the opinion that it would be advisable for the Department to authorize the purchase of a larger number of eggs than have been obtained in past years. The Superintendent's form of application for fry recently issued by the Department, which is being circulated throughout the Dominion, will impart information to parties interested in the culture of fish which has not been generally understood heretofore, in consequence of which it is only reasonable to assume that the applications from persons living in remote parts of the country will be more numerous. Trout eggs can be purchased from American breeders at a very low figure when taken in large quantities, and I trust the Department will sanction more extensive operations than have formerly been carried on under this branch of our work. The form of application referred to contains full directions as to where the several kinds of fry should be deposited to ensure successful results. This valuable information to parties receiving fry will enable them to plant the young fish with perfect safety, a duty hitherto wholly devolving upon the officers in charge of hatcheries to perform. The regulations set forth in the application will enable them to carry on the work more expeditiously; the fry will in this way be planted in more desirable localities and as early in the spring as it is practicable, and all trouble and annoyance will be avoided from parties sending in applications for fry subsequent to the proper time for distribution.

Repairs to Hatchery.

After the disposal of the fry last spring the hatchery was put in a satisfactory working condition, with the expectation of receiving a larger supply of eggs than usual. The following autumn the main reservoir was repaired and all the appliances connected with the establishment thoroughly overhauled. It has been found that the large number of hatching trays transferred with eggs to other hatcheries on previous occasions to the lower Provinces were permanently required there. This has considerably diminished our stock, and we will require upwards of five hundred new trays in order to ensure the successful hatching of our own supply. The building has not been painted for a number of years. This should be done during the coming summer, otherwise, it will be damaged to a considerable extent. The continued dampness arising from the water is causing premature decay of the wood.

Importance of the Newcastle Hatchery.

The increasing usefulness, coupled with the more enlarged operations which are now carried on at this hatchery, call for greater consideration as regards its general efficiency and management. In addition to its former work, it has become the parent institution for annually supplying large quantities of semi-hatched eggs of the more important kinds of fresh water commercial fishes to many of the Maritime Province hatcheries. On this account, this establishment has necessarily annually to collect at Wiarton, on the Georgian Bay, a much larger number of salmon-trout eggs than its own requirements would demand. This additional supply so obtained is also cared for and kept in this hatchery until the 1st of February, and even later, and then transferred in semi-hatched condition to Magog, Bedford, St. John and such other hatcheries as may require them, and now that a hatchery has also been established at Ottawa, requiring annually a large supply of salmon-trout eggs, additional importance is given to this establishment, and necessitates the work being carried on at this hatchery on a much more extensive scale than has been the case hitherto. These several institutions in the Maritime Provinces have no means within their range of operations for collecting supplies of salmon-trout or whitefish eggs, and, even if they had, it would necessitate almost as large an expenditure for each hatchery as is at present incurred by this establishment in collecting a sufficient number for all. The duty and extra work devolving upon us of looking after these eggs in addition to our own supply makes it necessary to employ a larger staff of officers than otherwise would be required.

Collection of Salmon-Trout Eggs.

In former years the system adopted for collecting a supply of salmon-trout eggs for Newcastle and the other hatcheries was carried on by employing an expert fisherman to set three pound nets in Colpoy's Bay at such cost as might be agreed upon.

In addition to the sum paid for this service, pound net licenses were granted by the Department to the fisherman so employed, which enabled him to fish these pound nets in open season in this locality up to the first of November, where pound net licenses were formerly prohibited. This caused considerable dissatisfaction among other fishermen, so much so, that it was deemed advisable by the Department to purchase an outfit for its own use. I was, therefore, directed to secure the requisite appliances necessary for carrying on the work of collecting eggs, and to visit Wiarton, with a view to the selection of proper grounds for setting the nets. The department forwarded to me at Wiarton two confiscated nets, with instructions that if at all suitable they were to be used in connection with the work. A few repairs placed them in proper condition, and after purchasing one new net I was enabled to proceed with the work. This new net was set at Gravelly Point, an old reliable fishing ground inside Colpoy's Bay. With the knowledge of the Indian Department, the other two nets were set in the vicinity of Hay and White Cloud Islands, on the reserve of the Cape Croker Band of Indians. All the nets were fairly successful in capturing parent fish, but by far the largest number was taken from the Gravelly Point net. The undertaking last autumn was the most satisfactory one we have ever experienced, not only from a financial standpoint, but also from the number of eggs secured. The unusually large quantity of *eleven millions* was collected in the short space of fifteen days, and many more could have been gathered, but this amount filled the hatchery to its utmost capacity. This record surpasses that of any other year, and to a certain extent may be attributed to the setting of the nets at an earlier date than in former seasons, thus allowing a supply of fish to enter the nets before the "close time." Last year every effort was put forth during the entire close season of the month of November, and we only succeeded in obtaining five millions of eggs.

I am convinced from experience, that two nets set in the vicinity of Gravelly Point in Colpoys Bay, will secure an ample supply of parent fish from which a sufficient quantity of eggs can be collected to stock all of the hatcheries requiring them.

By the proposed means a considerable reduction in the expenses can be effected. The cost of tug hire will not be so great, as the distance from Wiarton will be much shorter than when the nets were set at Hay and White Cloud Islands the past season. Further reduction in the running expenses will also be made as only one guardian will be required to protect the two nets against the encroachment of poachers as they will be situated only a short distance apart.

Daily Statement.

A statement showing the daily operations at Wiarton during the past close season is herewith appended, which gives the gross number of eggs taken, the fish manipulated, those injured and salted, and also the dates when the eggs were collected.

STATEMENT showing the daily operations of collecting Salmon Trout Eggs at Wiarton during the Season of 1889.

Date of Lifting Nets.	No. of Nets Lifted.	No. of Fish from which Spawn was collected and liberated.		No. of Fish Spawned out before entering Nets and liberated.	No. of Fish found injured or dead in Nets.		No. of Eggs collected.	Remarks.
		Males.	Females.		Whitefish.	Salmon Trout.		
Oct. 31..	1	83	297	3	3	17	1,100,000	Spawn running freely ; have evidently struck an early run of fish ; blowing fresh.
Nov. 1..	.....	.....	.....	.....	.....	.....	.....	Too rough to lift ; did not go down to nets.
do 2..	3	71	245	8	5	22	900,000	Upwards of 1,000 fish in Gravelly Point net ; spawning freely.
do 3..	.....	.....	.....	.....	.....	.....	.....	A large number of fresh fish in nets which are not ripe ; the Indian reserve nets are doing well now.
do 4..	1	68	160	10	4	12	550,000	These eggs were collected from Indian reserve nets.
do 5..	2	49	141	7	1	15	450,000	Wind blowing fresh ; cold weather.
do 6..	.....	.....	.....	.....	.....	.....	.....	Lifted Gravelly Point net, but fish not ripe ; very windy.
do 7..	.....	.....	.....	.....	.....	.....	.....	Weather very fine ; did not lift ; fish not ripe for spawning.
do 8..	3	182	607	59	4	47	2,000,000	Weather favorable ; upwards of 2,000 fish in nets ; Indian reserve nets have a good many fish in them ; this is a very large number of eggs for one day.
do 9..	.....	.....	.....	.....	.....	.....	.....	Fish left in nets are not ripe for spawning ; favorable weather.
do 10..	.....	.....	.....	.....	.....	.....	.....	Sunday.
do 11..	3	189	650	71	5	19	2,500,000	Weather fine ; fish spawning freely ; this is the largest number of eggs ever taken in one day by us.
do 12..	.....	.....	.....	.....	.....	.....	.....	Fish left in nets not ready for spawning ; fine weather.
do 13..	3	127	525	51	2	25	2,200,000	Cloudy, but smooth water ; this is a very large number of eggs to be taken in one day.
do 14..	1	24	97	20	5	14	300,000	Snowing ; took one net up at White Cloud Island, and liberated a large number of fish from which spawn could have been collected.
do 15..	.....	.....	.....	.....	.....	.....	.....	Blowing and freezing ; slight fall of snow.
do 16..	1	145	317	67	7	37	1,150,000	Lifted and took up the other two nets ; weather cold but fine.
do 17..	.....	.....	.....	.....	.....	.....	.....	Put all nets and appliances away carefully.
		938	3,039	296	36	208	11,150,000	

By an examination of this year's daily statement in conjunction with similar ports of former years it will be found that the Government had adopted the proper riod for the protection of salmon-trout during the spawning season in the waters the Georgian Bay and Lake Huron, where extensive fishing operations are carried

I have noticed that complaints have been forwarded to your Department to the ect that the present close season for salmon-trout and white fish is not in the erest of the country for the preservation of these valuable fish in our inland ters. My practical observations in collecting the ova of these fish during many years t leads me to conclude otherwise, and the very fact that large numbers of ripe s can be gathered only during the month of November is conclusive evidence also t the month of November is the proper close time for the protection of these fish, it is their true spawning time.

Condition of Eggs.

At the present time the eggs in this establishment are in a very healthy condi-, but owing to their being overcrowded in numbers and the continued rainfall this son, causing more sedimentary matter to settle upon them has given more work than al to clean them. A large number of these ova must be transferred in a short e to the other hatcheries requiring them; otherwise many will die from suffoca- during the period of hatching.

I have the honor to be, Sir,
Your obedient servant,

C. WILMOT.
Officer in Charge of Newcastle Hatchery.

12.—SANDWICH HATCHERY.

PROVINCE OF ONTARIO.

Report of the Officer in Charge of the Sandwich Hatchery for 1889.

I herewith submit my annual report of the works of this hatchery for the past .

In my last report I stated that there were in the hatchery 40,000,000 whitefish , and that I expected to obtain from them a good return. This report will show I was not far astray in my view of the numbers of fry which would be turned From this number of eggs were hatched 21,000,000 young fish, and in addition 00,000 eyed eggs were sent to other hatcheries, making a total of 32,000,000, or oduct of 80 per cent. of the whole. The young fish were placed in the waters at following places:—

Belle River, Lake St. Clair			2,000,000
Peach Island, Detroit River			1,000,000
Fighting Island	do		2,000,000
Stoney Island	do		1,000,000
Bois Blanc Island	do		2,000,000
Bar Point, Lake Erie			1,000,000
Pigeon Bay	do		1,000,000
Colchester	do		1,000,000
Kingsville	do		1,000,000
Leamington	do		1,000,000
Port Stanley	do		1,000,000
Hamilton, Lake Ontario			1,000,000
Niagara	do		1,000,000

In river at Hatchery.		5,000,000
Sent to Newcastle, Ont.		3,000,000
do St. John, N. B.	Semi-hatched	3,000,000
do Bedford, N. S.		3,000,000
do Magog, Que.		2,000,000
Total		32,000,000

After having distributed all the young whitefish, the next part of the work was to clean up the hatchery, and re-fill it with the eggs of the pickerel (doré). From four fishing grounds we were successful in gathering 30,000,000 eggs of this fish, and placing them in the hatchery. I might here state that while gathering these eggs at Port Lambton, during one night, when about a million eggs were in the floats ready to be conveyed to the hatchery, some person or persons either stole or destroyed the lot. As I could place the blame on no particular person, I was obliged to put up with this loss without any remedy. The fishing grounds where the eggs were gathered were as follows, in Lake Huron:—

Wees Bros	8,000,000
Joseph Leazeu	7,000,000
Stead & Hitchcock	10,000,000
Soloman's, River St. Clair	5,000,000
Total	30,000,000

From these eggs we hatched out 70 per cent., or 21,000,000 young pickerel, and placed them in the following waters:—

Point Edward, Lake Huron	2,000,000
Port Lambton, River St. Clair	2,000,000
Belle River, Lake St. Clair	2,000,000
Stony Island, Detroit River	1,000,000
Bois Blanc Island do	1,000,000
Fighting Island do	2,000,000
Pigeon Bay, Lake Erie	2,000,000
Port Stanley do	1,000,000
In river at Hatchery.	8,000,000
	21,000,000

The fishermen throughout this quarter believe that through the agency of the hatchery this fishery is greatly improved. The run of pickerel this year was very much the same as last, and all seem to be satisfied with the catch.

Eggs Collected, Season of 1889.

The number of whitefish eggs laid down in the hatchery this year was far greater than any previous year since the hatchery was started—in fact, nearly double. This is accounted for by the measures adopted by the Department in securing many fishing grounds at which we could handle the fish. The number of eggs put in the hatchery this year was 70,000,000. They were secured at the following places:—

Bois Blanc Island, Detroit River	30,000,000
Stony Island do	20,000,000
Fighting Island do	20,000,000
Total	70,000,000

In addition to this number put in the hatchery, 4,000,000 eggs were taken from sh at different stations, and impregnated and then thrown into the river. The laces where this work was done were as follows:—

Bois Blanc Island	1,000,000
Fighting Island (pier fishery)	1,000,000
Jollie's (main land fishery)	1,000,000
Gauthier's do	500,000
McKee's do	500,000
Total	4,000,000

The fishing at all points of the river this year was considered good by all the shermen. At Bois Blanc Island (the Government fishery) the fishing was much etter than it was last year, but a good deal of trouble was experienced from high inds at Bois Blanc Island, which at times would cause the water to recede some 20 aces from the shore, leaving dry land where at other times it was covered with ater. This necessitated a great deal of work—so much so, that we were obliged to freuently carry the racks with fish into deeper water. The way to remedy this will be to uild a movable breakwater, which could be filled with stone and sunk in deep water, id taken up again every year after the fishing season was over. This breakwater ould cost about $100. This provision is very requisite for the preservation of the arent fish placed in the pens, from the heavy seas which dash the fish against the ocks and so injures them as to make many of them useless for spawning purposes.

Provision must also be made for the building of another windmill on Lake uron, at Wees's ground, for the purpose of supplying water for the tanks in which ie pickerel are kept until ripe enough to take the spawn from them.

In my last report it was shown to be a necessity for having more room in the uilding for hatching purposes. This year, with the large amount of eggs put into ie house, they are altogether too over-crowded for their safety. As quite a lot of epairs will have to be made to the building next season. I would again ask the epartment to consider the advisability of building a dwelling for the officer in charge id his family. If this were done the whole floor of the house could be used for fishreeding purposes. By doing this there would be plenty of room to run 700 incubaors, with a capacity of turning out over a hundred millions of fish. The repairs equired will be quite general. The foundations of the building have rotted away and ust be replaced, together with a new floor, as the present one is much decayed.

The hatchery in Detroit, on the American side, formerly run 300 jars, but this ear the capacity has been increased to 1,000 jars. I would, therefore, urge upon ie Government to make the change I have proposed, when I feel certain we can aintain the credit which the Sandwich hatchery has hitherto held as being the riginal whitefish nursery of America, and the good work it has done since in eplenishing many of the waters of Canada with these valuable fish.

Respectfully submitted.

WM. PARKER,
Officer in Charge of Sandwich Hatchery.

We, the undersigned, hereby acknowledge that we saw Mr. Wm. Parker, of the ndwich fish-breeding establishment, turn out from the racks at Bois Blanc Island large number of whitefish, he having received instructions from the Department of isheries at Ottawa to do so.

ANDREW HACKETT,
Lighthouse Keeper, Bois Blanc Island,
H. A. HACKETT,
WM. HILL,
SAMUEL ADAMSON,
A. W. MARKS, *Detroit,*
JOSEPH MARTIN.

ANNEX TO FISH-BREEDING REPORT.

REPORT

OF

OPERATIONS OF THE HATCHERY AT FLODEVIGEN

DURING THE FIVE YEARS 1883-1888

BY

G. M. DANNEVIG,

SUPERINTENDENT OF THE HATCHERY.

ARENDAL, 1889.

(*Translation from the Report of the Board of Directions for Arendal and Omegn's Branch of the Society for the Encouragement of the Norwegian Fisheries.*)

To the Directors of the Arendal and Omegn's Branch of the Society for the Encouragement of Norwegian Fisheries:

I have the honor to submit herewith the following report of the labors of the hatchery at Flodevigen for 1888, as well as a recapitulation of labors during the last five years.

1.—The History of the Hatchery.

In the beginning of 1880 there appeared in the local press lively articles discussing the fisheries in the district. It was universally agreed that the fish were steadily and alarmingly decreasing, and that some remedial measures were necessary, but nothing was done. There was but one opinion with regard to the decrease complained of as well as the means of counteracting it. About this time there appeared a report by Mr. F. M. Walkem upon the Fisheries Exhibition in Berlin, in which amongst other things, was given an account of experiments in the United States during 1878-79 of artificially hatching cod, and which were considered to be successful. These experiments were referred to, as follows: After a special grant by Congress was allowed, a steamboat was constructed to carry on cod hatching on a greater scale, and is now in full operation, supplying suitable areas with the hatched brood.

It was very promising, and I supposed that as with us there would always be a sufficient stock of spawn and the cost of labour seemed to me very small, it appeared the most suitable, and for the general public, least expensive means of restoring the fisheries; consequently, I commenced, through the medium of the press, to disclose my plans, and when the branch of Arendal was instituted in 1882 I submitted to them a report on the matter. The construction of a hatchery for salt-water fish was included in the programme of the institution's labors. As the establishment was just started, and

was without capital or sufficient members for so large an undertaking, special arrangements had to be made to get the necessary means to carry out the plans; therefore, application for voluntary grants were forwarded to the Savings Bank of Arendal; the Society for Norway's Welfare; Arendal's Spirituous Liquor Association, and to the Society for the Encouragement of Norwegian Fisheries, all of which replied favorably. I was also instructed to proceed to all the villages along the coast to take up subscriptions from private individuals and to do anything in my power to promote the undertaking. However, as the Fisheries Exhibition was to be opened in London, in the spring of 1883, and as it was generally believed that correct and reliable information respecting hatching of salt water-fish could be obtained there, I went there, to enable me to study the matter. Here I was met with disappointment of a very serious nature. It was shown that the reports by Mr. Walkem respecting the American Fishery Commission's Labors had been exaggerated inasmuch, as the vessel had never been used for hatching salt-water fish. An attempt had been made in 1878-79, but it was characterized by the Americans themselves as anything but satisfactory. After that the matter was dropped. I had occasion to inspect the apparatus used, but this was of little benefit to me, as I was informed they were considered inapplicable. My position was therefore not improved. Instead of finding a path cut out for me, as I was led to believe, I was met by doubts and uncertainties, which the most prominent men and the best informed on the subject had been unable to solve.

My own limited knowledge of the practical side of fish culture, and anything concerning it, did not improve my situation, but I condoled myself with the thought of having undertaken the job in good faith, and I knew that with a little perseverance I could inform myself on the subject, as it was too late to give it up.

Furnished with all the information I could possibly get, for which my thanks are principally due to the very polite American gentlemen, I left for home after a sojourn of about three weeks, to make practical use of what I had learned.

The erection of the building was commenced that fall and finished in January, 1884. The building is a two-story one, 40 feet long and 30 feet wide, and contained at that time as many appliances as were thought necessary for a yearly production of a brood of about 80 millions. The American appliances and experiments not having met with success, I was left on my resources. I adopted the rotary apparatus used by the Americans, and Clark's hatching-trough, before tried. These seemed to me most suitable, and I hoped after a short time to know both their good and bad points, and to be able to use them as a kind of foundation for more useful improvements. Later on I gave up altogether the rotary apparatus and made many improvements in the other one, rendering it more suitable for our business. The Americans have, however, given up both, and are working now with a new, very cleverly arranged apparatus, which, for reasons I will give further on, could not be used by us, because other improvements planned by myself had been adopted.

The size of the building and the number of the appliances, I may state, was entirely experimental, which, if successful, would be enlarged. In measuring the lot the directors got right of pre-emption of such quantity of ground as would be necessary for the extensions. When the rotary appliances were discarded, the space previously occupied by them was used for tanks for the stock-fish, thus reducing the factory's production-stock to only half of what was originally calculated, and causing an extension of the factory to be much more needed.

To give a detailed statement of the fittings of the building, I consider at present quite unnecessary, as already application for a grant towards the extension and removal of the factory is submitted for the consideration of the Parliament at its first sitting; the extension and removal necessary which will be specified below.

2.—The Procurement and Keeping of Stock Fish.

The common belief that a female cod each year develops 2,000,000 of spawn does not hold good with the common bay or coast cod. The number is large enough, but when only about 400,000 to 500,000 matured spawn can be accredited to one fish, it must be a very prolific cod to develop 1,000,000, not to say 2,000,000. As a rule, the cod caught

on the coast is very small compared to the sea cod proper. The reasons for this are that the coast or bay cod seldom lives long enough to be fully grown. The greatest numbers are caught between one to ten years of age.

When a hatchery is to be provided with stock fish to enable a certain number of receptacles to be filled with spawn, there are circumstances which are to be taken into consideration, and which, for safety, necessitates purchasing far in excess of calculations.

For instance, if you begin before the spawn is sufficiently developed, and you cannot determine the sexes, you are liable to get a greater number of males than females; hence, a scarcity of eggs would result. Again, you may get fish that may have already spawned, or for some reasons produce less spawn than expected; and others again, from various causes produce dead spawn.

The prevailing method of spawning the fish is to carefully press the hand over the belly and the spawn flows out. Notwithstanding the greatest care, considerable immature and dead spawn, incapable of impregnation, is sure to become mixed with the mature and vivified ova, resulting in considerable loss. There is no doubt this process is much in need of improvement. I have therefore kept my attention fixed on this subject, and have succeeded in finding a plan by which the stock fish can, without being touched by human hands, themselves accomplish the fecundation in a natural way, after which the eggs are carried to an especially constructed apparatus and conducted to the hatching boxes. I shall further on explain this method, when I describe my plan for the extension and removal of the hatchery.

I have already stated that from a living cod you will sometimes get dead spawn. This strange fact can be accounted for by the manner in which the fish is taken, as the spawn gets destroyed just when the fish is removed from salt to fresher water. That it is this sudden change which causes the loss of eggs has been proven by the fact that fishes which have for a year, or at least a good while, been kept in less saline water, produce healthy spawn.

If you have got such fish, which often happens, there is no other way but to remove them into stronger saline water. Of course, the diseased spawn cannot be saved by this or any other means, but the later developed eggs will be of use, and much is saved thereby. The cod does not bring forth all the spawn at once; some will not ripen or mature until several weeks after the first are laid. The most suitable as well as the cheapest method regarding the stock fish and their treatment would be to have the fish bring forth their spawn themselves, by transferring them to the basin for fecundation at the proper time, and when done to return them to the tanks, to be kept, if necessary, until the following year. Of course, they have to be fed the whole year, but this will be a very small expense compared with buying a new stock each year. The fish will both grow and thrive, and produce a considerable amount of spawn. * * * * *

3.—The Hatching Process.

On the 19th February, 1884, the first eggs were put into the apparatus, and, as was expected, one difficulty arose after the other. On account of the weakness of the salt water the majority of the eggs sank to the bottom of the apparatus, and as the water was not filtered the eggs became dirty and would not rise again and were thus spoiled. To arrange the apparatus to keep the water running all the time and prevent the eggs from remaining on the bottom was the first problem to solve. Work was continued at this for a long time, until at length, towards the end of the season, I succeeded in inventing an arrangement suitable, and which is described in my report for 1885. To prevent the apparatus from becoming unclean from the water running through it, a very simple filter was attached, which afterwards was exchanged for a more perfect one, with moveable frames, which caught the sediment; but I regret to say a great deal of it went back into the water when the frames were lifted up to get cleaned. This inconvenience can be avoided, if when the hatchery is rebuilt, there are constructed several smaller filter-boxes, instead of only one large one. To use in turns one or two of them and let those that are to be cleaned run dry

before the frames are touched, the filtering process will be regular and to be depended upon. A complete cleansing of the water is of great importance, not alone because the eggs will thrive better, but also because you avoid the additional labor connected with cleaning the apparatus.

Often the question has been raised how the hatching process takes place and in what way the spawn or brood are counted. I will give a short description of the plan followed here.

When a number of the stock fish is supposed to bear ripe spawn it is necessary to get hold of them, and this is done in the following manner:—In a small tub of salt sea water (spec. weight, 1.024) enough of the male fish's milt is put to give the water a milky color. Then one of the female fish is examined, and if the eggs come freely let them drop into the tub, and move the water slightly with the hand. After the fish are examined they are thrown into another tank, and thus every fish is tried until none are left. This work is gone over again every other or third day for a couple of months, and when you have several hundred fishes to work with, it is easily understood that this work is very tedious, and at the same time trying to the fish. The fertilised spawn is then washed clean and put into an 18-inches-high glass cylinder, which is half-filled with clear, salt sea water. In a few minutes a change takes place, and the living eggs gather in a close layer on the surface, and the dead spawn and sediment sink to the bottom. Between the layers of good and bad eggs is a belt of clean water. With a ladle perforated at the bottom transfer the living spawn into a smaller cylinder, as a measure which may be found after careful measurement and weighing to contain 60.000. After this the spawn is transferred into the hatching troughs. These are 8 feet long and 2 feet wide, and contain each ten spawn boxes, which hold 3,000,000 spawn, or 300,000 in each box. In this trough let a steady current of water run for two or three days. The eggs may then be taken up to allow the apparatus to be cleaned, and the spawn will have to undergo another sorting, in the same manner as before, the living spawn to be returned to the boxes and the sinking or dead ones to be thrown away.

In this way the work is continued every second or third day until the eggs mature. The living spawn is quite transparent, so that the growth or development of the embryo can be followed in every detail. Dead spawn will be greyish white, and altogether opaque.

A few days before the fry is ready to break through the shells the apparatus and spawn is cleansed for the last time, and notes made as to how much of the good spawn is left. The loss may run from 20 to 70 per cent., and depends mostly on the saltness of the water during the time of development. If, at the collection of the eggs, unripe ones are taken, of course the loss will be greater.

By following this very easy process you can keep track of the hatched quantity. A difficulty is when some of the brood die after being hatched. Measure and weight are then of no use, but the loss may be made up by calculation, which, after some experience, can be made pretty accurately.

Sometimes the sea water gets too fresh, and when this takes place the greatest loss is experienced.

* * * * * *

That the greater or less saltness of the water plays an important part over the fish which inhabit it is well known. There are fishes that spend all their time in fresh water, and others that alternately live in fresh and salt water, and others again that never leave the ocean Some fishes, for instance the salmon, go from the ocean up into the rivers to lay their spawn. The eel, on the contrary, leaves the fresh water for the open sea.

* * * * * *

If the spawn of different kinds of fish is examined it will be seen that the so-called mikropyle (the opening through which the fecundation takes place, and through which the egg is provided with air and water) is alike with all fishes, but in regard to the place where it is situated is very different. At the salmon spawning, the female fish places her eggs in the gravel purposely dug up, after which the male

fish oversprays it with his fertilizing fluid. The micropyle here turns upward, which is necessary in order that fecundation may take place. This is also the most suitable posture, because the opening then cannot be closed up, which might happen very often if the opening were on the under side of the egg, in which case it would rest upon the bottom.

In regard to the cod, what has been said of the salmon does not hold good. It is just the opposite, but still the results will be always the same and most satisfactory. The spawning of codfish takes place in the middle water; the male fish swims below, and as the eggs as well as the melt are lighter than the sea water, they float upwards and the fecundation takes place from below. This agrees perfectly with the construction of the eggs of the cod, as the opening or womb is on the underside of the egg.

In another respect, and one of great importance, is that the opening for impregnation is placed on the underside of the floating egg. In this way the channel through which they become vitalized is not open to the outer world, being constantly under water, even though the eggs in calm weather should remain a long time on the surface.

I have before mentioned about how the less salt water is destructive for the spawn even before it is emitted, and I have by means of special trials found that the same takes place with the already fertilized spawn. I have also stated that the water on this coast at times is below the normal saltness, and that this is unnatural for the cod-spawn consequently, one would easily think that the destruction would be enormous. This is, however, not the case everything here, as well as anywhere else in nature, is well arranged, and therefore necessary precautions are provided. When the fresh water's specific weight is 1.000 the weight of the cod-spawn is 1.022, and the salt water 1.025; consequently, the spawn floats in the salt water but sinks in fresh water. This is the course which nature has prescribed, and which we soon will find as infallible. If, for instance, a quantity of the cod-spawn is carried by the current towards the mouth of a river or other gathering of fresh water, it will at once sink until it again strikes a current of salt water, which is heavy enough to support it. The spawn has thus simply settled under the river water to avoid coming into too close proximity of the dangerous fresh water.

Respecting our more common kinds of fish, I may only remark that the mackerel, haddock, whiting (sey and lyng,—kinds of haddock), and all kinds of flounders have floating spawn, lay their spawn in lumps on the bottom, and that the spawn of the herring, after being shed and fertilized, sinks to the bottom and sticks to it. Of all kinds of spawn I have examined I have found the spawn of the herring most hardy, and consequently the loss during the development very insignificant. The newly-born herring-brood is well fitted out for swimming facilities, and surpasses in this respect, from the very beginning, the helpless cod-brood. Also here the wise arrangement of nature can be seen, because upon the presence of the necessary number of herrings depend to a large degree the existence of the other fishes. On the contrary, the fishes with floating spawn seem to be better fitted out in another way, viz; in the quantity of spawn produced, and which, for each one, may be counted in millions. There is not the least doubt of this wise arrangement of nature here, when one takes into consideration the myriads of herring broods which, at the time the floating spawn is developed, are swarming in the upper parts of the water. After having shown thus how the great teacher, Nature has arranged precautions against unnecessary dangerous influence, I will show these circumstances when in the apparatus. We have seen above how the spawn, to avoid the fresh water, sinks to the bottom. When the water pumped into the apparatus is not of sufficient saltness the same thing occurs, but as the apparatus is only about 8 to 10 inches deep, the spawn will go to the bottom and remain there. This is two-fold dangerous, firstly, because the spawn is in most unsuitable water, and secondly, because it is on the bottom, which is against its nature. To avoid this I have made arrangements so that with the help of the current and other mechanical inventions the eggs are always kept in motion, but in regard to the saltness of the water I am no further ahead. But the only true way will be to have at all times the water of enough saline

strength to cause the spawn to float in the apparatus, which can be easily managed in the following manner:—

To the hatchery is connected a salt water basin, with a capacity of about 2,500 cubic meters, the surface water of which is about 8 meters over the one in the apparatus. It is sheltered from the south by a wall 5 meters high. After the plan now under consideration, it is the intention to remove the building from its present site to this wall. The surface of the water in the basin will then lay about 3 meters higher than the floor of the building, and through this arrangement the necessary pressure is obtained to conduct the water to all the apparatus placed all round in the building. This basin is thus a reservoir, from which the necessary quantity of water can at any time be got. To keep this basin full of water always the engine is used for pumping, now as before, but with this difference, that the water is only pumped from the sea such days when it is sufficiently salt, when on the other side the water is pumped back to the basin after having passed through the apparatus, and for this purpose is retained in a tank under the floor of the building. Fears may arise that the water in passing through the apparatus may lose the air contained in it, but this is easily remedied by making a fine hole in the pipe between the pump and the basin. Through this hole the air will enter and mix with the water in the valves, and the water will become like a fine foam. A person is also apt to fear that the temperature in the basin may become too low for the development of the brood. To prevent this the waste steam from the engine is let into a box where it is condensed, and through this, the pipe from the basin runs, and should the heat not be sufficient a supply of steam direct from the boiler may, be let in. The considerable heat which passes through the chimney would be used also for this purpose. There is then nothing hindering me to overcome this, the greatest difficulty I have had in a technical respect to fight against. It only remains to get the hatchery removed and fitted up according to proposed plans, because upon this removal depends all the improvements I have made on the work of hatching at present.

The specific weight of the sea water was found to be in the apparatus:

1884 ..... 1.0217.
1885..... 1.0252.
1886..... 1.0231.
1887..... 1.0249.

} An average for four years 1.023.

Maximum was 1,027, and mininum 1,015–4. The proportion between for the development favorable and unfavorable days was as 3 to 1. The changes come often very suddenly, and it sums up as above cited. They are results of the strength or direction of the wind. In the four years the hatching process has produced a total of 101½ millions young codfish.

4.—Breeding of Cod.

This question, which stands in connection with the hatching, I have also tried to solve, and met with favorable results. True, the number or quantity brought up is not considerable, but sufficient enough to show the possibility of breeding, which is all that is necessary. My intention was, first, to show the public that the fish hatched at this place also had enough vital power to develop themselves further, to which, later on, came the wish to know the reason for the great difference in color reigning between the different families of cod, and for which, to my knowledge, science has failed to give any explanation. As regards the breeding, trials were made by me in 1884, and continued during the winter of 1885. Direct results were not attained, but I acquired a great deal of information and experience, and came to the conclusion of how the matter had to be commenced to meet with success.

When the young fish is delivered from the hatchery, it is only 6 to 8 days old, and has a length of 3 to 4 m.m. To keep it longer would not do, as the fish requires, for its further development, nourishment, which, of course, cannot be got in the filtered water where it has been kept. To do away with the filtering process would be of no use, as the comparatively small quantity of water in the apparatus (about

15 litres to 200,000 fry) could not contain any nourishment worth mentioning, even if the speed of the current was increased over the average, viz., full change of water each time. Thus there are only some trifling and helpless difficulties to be met with.

If a number of the young fish is let into a glass cylinder, with sea-water of suitable saltness, one will see them attempt to reach the surface, and when this is reached, gather together at the edge that is turned towards the light. Under these circumstances, it is quite possible, with most careful changing of water, to keep them alive a longer period. If, on the contrary, water of less saltness is used, the results will be opposite. The young fish, the swimming capacity of which is limited to a few intervals of interrupted movements, or pushes, attempts now to reach the surface, but its weight, being more than the water, will pull it back and cause it to sink to the bottom, where its destruction is certain. Thus the first and most essential condition to make the breeding a success is, that the water in which the young fish is placed may have so much specific weight that the fish, without exertion, may be able to keep away from the bottom. Besides this, care must be taken that the water has not got too high a temperature, which has proven itself to have a dangerous influence upon the eggs, as well as the young fish. Lastly, the water must contain necessary nourishment, and must be changed at regular intervals.

To cut off a ground bay, and let the change of water be made direct from the sea-water outside, would not do, because this water at the surface would be too much mixed with fresh water; and I selected, therefore, a more costly, but more sure course, to build a large basin up on the shore, and filled, it by means of the steam pump, with water from the depths of the sea.

The basin was finished in the fall of 1885, and has, as before stated, a capacity of about 2,500 c. m., and the greatest depth of 4·75 metres. After having been cleansed in April, 1886, and provided with different sea-weeds, etc., it was filled with sea-water, in which, on the 3rd May, was placed about 500,000 cod and a few thousands of flounders and herring brood. It may here be remarked that, when the basin was new, with well-washed walls and bottom, it contained too little nourishment for such a great number of fish, and to this may be ascribed as the most essential reason why a great number did not grow. The same basin, which is now all over covered with sea-weeds, and which, especially in the spring, shows a great deal of vegetation, would now, without any difficulty, be able to give nourishment to a manifold number.

In regard to the young cod's further development and growth, I refer to my report of 1886 as follows :

Date.	Age.	Size in M. M.
April 26	0 days	3 M. M.
May 3	6 do	5 do
do 16	19 do	7 do
do 18	21 do	8 do
do 21	24 do	9 do
do 31	1 month, 5 days	10 do
June 3	1 do 8 do	12 do
do 6	1 do 11 do	15 do
July 12	2 do 15 do	55 do
Aug. 12	3 do 15 do	70 do
Sept. 12	4 do 15 do	85 do
Oct. 12	5 do 15 do	115 do

Between the 6th June and the 12th July, there is, as can be seen from the table above, a great leap in the development, which, however, must be explained by the fact that the young fish at this time commenced to eat the food thrown to them twice a day, and in considerable quantity.

Since the above was written the fish have gradually increased in size, but their number has had a considerable falling off. The most essential reason to the death

rate has been the cold of the winter which, especially last winter (1887–88) was both piercing and of long continuance, so that on the 1st April there was ice 20 inches thick in the basin. The size of the fish is, at present (at 2½ years of age) from 9 to 18 inches. The biggest fishes keep themselves mostly in the deepest hidings, and are seldom to be seen. The present number is 200 to 400, and there is a chance that they will spawn in the spring. Further information respecting them will be given in the next yearly report. That the brood hatched in the hatchery is in possession of enough vitality to further develop itself is thus proven: That, in proportion, only a small number has been brought up to eatable fish, depends, as shown before, upon other circumstances altogether than the vitality of the brood.

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5.—The Lobster.

After some time, studying the development of lobster spawn, I found proofs that it may, without great difficulty, be hatched after being taken from the mother. I constructed, during the spring of 1885, necessary apparatus, and commenced then experiments after a certain manner. In my report for said year is given the successful results obtained, why the problem of hatching lobsters, upon which so much time has been spent, may be said to have been solved.

The only difference in my method was, as mentioned before, that I worked with the spawn alone, and not as my predecessors in this line, who all seem to have been of the opinion that the spawn absolutely must remain attached to the mother during the development, and therefrom put them into the hatching boxes. The difference may seem, to the ignorant, to be of no importance, but, really, it is extremely so. To illustrate the difference, I wish to show that when the loosened spawn of 6,000 lobsters, the number which the hatchery will be able to hold after the extensions are made, can be easily handled by four men, it will take a great deal of work to attend to 600 in the water-flowing boxes, with ten lobsters in each. The food alone, of 6,000 lobsters, at ½ ore each, is Kr. 30$\frac{00}{00}$ per day, or twice what the whole hatching after my method will cost. The same year, experiments were made at breeding of the young lobsters, and which met with success, which is well known never happened before. I believe, though, as mentioned in my report of 1885, that the breeding of the young lobsters will never reach any importance, as the young lobster's repugnant or voracious nature is such that they can never be kept together in any great number like other fish. What the result would be, should the breeding be done in larger basins, I cannot at present say. That some could be brought up is without doubt, but whether the number would agree with the expenditure, is another question. Although I entertain some doubts, I believe that an experiment ought to be made as soon as the hatchery is removed inasmuch as no other extra arrangements need be made, because the hatchery has all the necessary basins, and the expenditure would be very small. In regard to the hatching of the spawn, I believe this business has a grand future. "What *can* be done and what *ought* to be done is that yearly, in the months of May or June, gather as much spawn as possible and send it to the nearest hatchery, to be hatched there, and then when the young lobster is about eight days old let it loose. To do this, and thus save a part, anyhow, of the immense quantity of spawn which yearly is destroyed and of no use to man, has been the aim of my labour, and as shown above, also reached.

6.—Oysters.

In my last yearly report, I gave a statement of the results arrived at during the two previous years with breeding of oysters in artificial basins. The work was continued this summer, and, notwithstanding the low temperature during part of the summer, the results were very satisfactory. As the basin now used for oysters was constructed for another purpose altogether, I sent the Government a petition, asking for a grant of Kr. 3,000$\frac{00}{00}$ for the construction and running of a more suitable basin, and to get a chance to prove my oft uttered assertion, that oyster breeding can be carried on successfully in artificial basins.

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As well known, the oyster-breeding in our country has been carried on more or less by companies of considerable capital, which have, to begin with, procured one or more of the so-called ponds, without which oyster-breeding, up to this, has been considered impossible. That these ponds, when properly managed, can give very good profits, I have no doubt, but as their number is very small, the Norwegian oyster breeding, if exclusively depending upon these, will never be of any importance; and what I most fear is the business will never come into the hands of the coast inhabitants, who are most in need of such an extra income. To make the oyster-breeding independent of these few natural ponds, and so that it may be carried on all along along the coast, and to find out a simple and cheap method of working, by which old people, women and children could find a paying employment, has been the problem I put before myself, and which, if three years' successful labors can be considered decisive, has been solved in a satisfactory manner. There are now sure proofs that the oysters spawn in small closed-in basins with artificial water temperature, and that the young oysters thrive with very little change of water; that they, after swarming time, attach themselves to the traps or tiles put out, and that the labors in connection will be very insignificant compared to the gain derived. Thus there is a chance offered to use all the little bays, as well as coves or hollows in the rocks, all along the coast, which could easily be closed in, and in that way be useful for oyster breeding. To show further the importance of such an industry is considered unnecessary. That the experiment ought to be continued is plain, partly to gain more experience and partly to endeavor to make the work cheaper; but there are two questions which cannot be solved with the means that now are at my disposal, and I believed it just to submit this petition. These questions are:—

1. With how low water can work be done without fears of a failure?

2. In what proportion does the cost of running of a rationally managed basin stand to the average profits?

In regard to the first question, it is a very important one, as the dimensions of the walls and the strength of the pumps, and thus the whole cost of the undertaking, is depending upon it. To close in a bay, for instance, 10 feet deep, will, in many places, be a very easy task, when an additional building of, for instance, 5 feet, may be impossible. My present basin has a depth of 16 feet, and has, as will be shown below, given very satisfactory results, but it is necessary to gain knowledge if not a shallower water, for instance of 8 feet, would be sufficient; that this would make a great change in the running expenses is plain.

To lower the water to any extent in my basin would not help to any result, as the area would then be only too small and the surface would lay so far down between steep walls that the wind could not cause the least movement, which I consider to be of a very great importance. That my experiment will be successful I am pretty sure, notwithstanding I know that others have in other places made trials and met with failure. The reasons for this were, perhaps, that those parties could not spend so much of their time to follow the development in all its details, which, besides a thorough knowledge of the business, is absolutely necessary if these experiments may reach good results.

The basin I intend to build, and in which the work would be carried on next summer, has now 1 foot of water at ordinary water height, which, after closing up and pumping, is increased to 8 or 9 feet. The capacity will then be about 400 cubic fathoms. The bottom is very even, and consists of sand and shells. It was by the owner, Mr. C. T. Boe, kindly given to the hatchery, in the close vicinity of which it is situated. To fill this basin there is one windmill and two vessel pumps to be used.

The next question is to show the proportion between cost of running and profits, and I had thought to keep special accounts over this. This is so much more necessary, as artifical hatching, for the present, is looked upon with distrust.

The only work with the running is to chalk the tiles, to place them upon the trestle-work, to tie and put out the brush-wood, and to keep the windmill going when pumping is necessary. To do this one only man is required from 1st of May to 31st of

October, and during the greater part of this time he will have very little to do. The yearly cost of running such a brood-basin can, when everything is to be paid, be placed at about Kr. 400. The plans are, to, after sometime use brush-wood exclusively and thus make the work more simple and more easy to be performed by old people, women and children. In regard to the possible results in such a basin, I cannot very well say, as this experiment would differ so much from any previous ones, but if successful, which I venture to hope, I think, taking in consideration my present basin, that the new one may produce about 200,000 brood. I calculate then, that in the basin is placed 10,000 tiles, and an amount of brush-wood compared to that, the average number of, on each tile attached, oysters, would be 10, which I consider for my present basin a very poor result.

After this calculation the production of brood, rents of ground, etc., will cost about 25 to 30 ore per 100. By using the method proposed by me, the main work can be done by the members of a family, so that the father can attend to his regular work.

To show of what importance the oyster breeding may be to a country, I refer to Professor Browne Goode's work, "The Oyster Industry of the World;" that the oyster culture in France employs 29,431 persons; the yearly production is 680,400,000, and that these, valued at Kr. 1.83 per hundred, represent a capital of 13,000,000 Kr.

This colossal industry, which is not 20 years old, received from the very start, and later, considerable assistance from the French Government.

With regard to my earlier operations with oysters, I beg to refer to my report of 1887. This year the work has been as follows:—

From Tysnees and Stavanger, 650 small oysters and 25 older ones were bought last May, which, together with 25 from previous year, were placed in frames, with bottom of wire, and hung out in the basin. During the first fortnight a few died, probably from the transport; but during the last three months I have only found two dead ones out of about 600, which shows that the natural circumstances were very favorable in the basin for the oysters.*

Swarming brood were first seen the 5th July, and increased in number until the end of the month. From the 9th August it again increased, and still continues, but widely spread.†

The first discovered young oysters attached to tiles were found on 29th July, thus 24 days after the commencement of spawning time. The first traps, or gatherers, were placed out on 18th July, and were kept on until the 14th August, or long after the first cold had come.

Besides being put out on different occasions, the traps were put out in different positions and depths, from the surface down to 10 feet. The reason for so doing was to gain as much knowledge as possible, which seems to me to be of much more importance than to obtain the largest quantity of oysters. For traps have been used 1,000, tiles and a quantity of brushwood, of which 500 tiles and five-sixths of the brush were put out after the cold had come. The birch brush, which was brought from Stavanger, reached here too late. On examining the traps, one comes to the following results:—Those first put out are most covered with young oysters, and of them those that are put deepest down. Tiles put out from 18th to 21st July, in 9 feet deep water, have from 113 to 24 attached oysters, an average of 55. Tiles put out 23rd to 24th July, in 1 to 3 feet deep water, have from 2 to 34 oysters, an average of 14. (The last number were arranged in three layers). Tiles placed out at the same time all over the basin, in different depths, were all well covered, but on account of the water not being transparent, I am unable to tell the average number. Oyster and other shells, fastened to wire or twine, and suspended from other wires down to about 8 feet depth, are covered up to 15 oysters on one shell. A number of 8 to 10 is very common. The original stock oysters placed out are also covered with young oysters, and these in proportion to the depth they were placed. The greatest number found hitherto on one single oyster was 7. Still more uneven than the tile were

*Since the above was written (middle of September), and up to New Year, none are dead.
†Middle of September.

the brush wood bundles covered. On one very small bundle, smaller than a common broom, I have found 83 young oysters, when on others, many times that size, I did not find one. A third reason arises for to explain this. When new birch brush-wood is placed into salt water it is covered by a kind of white spots, or a kind of thin salivary coating, which hinders the attachment of the oysters. Brush-wood already used is, therefore, better. A more specified report will be given in my annual report for this year. The number of young oysters gathered are supposed to be 12,000 to 15,000, and the number of tiles or traps used for the first swarm, 600, thus 20 to 25 on each. Respecting the last swarm, no information can be given; if the oysters attach themselves even, it is expected to be small, and of little importance. Taken on the whole, the culture of oysters this year has been under the average, on account of the unusual low temperature of the sea water. For instance, − 9° R in the middle of July. The temperature in the basin has this year been 15°, and 20° last year. The results of my experiments during the last three years have shown that broods of oysters can easily be produced in small artificial basins, and this yearly, as a rule. The many difficulties and uncertainties generally met with by oyster breeders have not occurred to me, and I have found that the whole oyster culture depends on two main conditions, namely, the saltness of the water and its temperature. The biological circumstances appear to be pretty even all the time, and do not seem to prevent the breeding any. In regard to the breeding, I have many plans, but want of means has prevented me from putting them into operation. If necessary, the young oysters could be placed in the sea, their natural home, and where they could pass the winter. I intend, however, to let the greater part remain in the basin, to find how much the oysters can stand, and which way to success I find the most suitable. To continue the gathering of spawn in my present basin I consider of small use. Having only a capacity of about 15 cubic fathoms and keeping in it a large number of cod, it is quite natural that it is hard to be worked, and will never give the results that I wish for in the interest of the business.

As the nature and the position of the basin used has made it possible to make daily observations of the stock molluscs as well as the swarming brood, I have succeeded in clearing up a number of circumstances which, by some oyster breeders, were explained in a different manner.

The assertion that oysters do not spawn the same year they are removed has been shown by experiments in three successive years to be erroneous, and the same thing with the same assertion about stock oysters when placed upon suspended frames. These results are, however, quite natural. The oyster must spawn when the time has come, like any other creature, as the process is not in any way depending upon the well-being of the oyster.

That a very low temperature is unfavorable to the oyster is admitted; but it is going too far to say that oysters do not spawn during cold summers. In 1886 the temperature in the basin was 12°, in 1887 20°, and in 1888 15°+R. In the first year the temperature was exceedingly low, but this notwithstanding, the spawning went on as usual during the right season, namely, the first part of July. With regard to the development of the swarming brood the process was slow, so that it took thirty-five days from the time the first young ones were discovered in the basin until they attached themselves on the tiles or brushwood. In 1888, with a temperature of 15° R., it took only twenty-four days. In the year between, in every way so favorable to oyster-breeding, I took however no r otes, as all work with the oysters was discontinued on account of the bad economical position of the hatchery.

As a lower temperature than 12°+R. is very rare at our coasts in the month of July, I believe, and for good reasons, that the oysters spawn every year, provided no sickness caused by local casualties, have made them unfit for propagation. That the slow development of the swarming brood in a low temperature, can contribute to that the harvest of oysters becomes very small, is very likely, and it is therefore necessary to receive from the oyster-breeders of our country information about the number of oysters and temperature during the different years.

The amount of dangerous effects upon oysters by low temperature in an oyster basin is also dependent upon other very important accessory circumstances. In an open basin, where the water can run in and out, the loss of swarming brood will be larger for want of warmth than in a basin closed in. The depth of the water always changes. In an open basin there will always be a constant current that at outgoing or incoming will cause a large loss of brood, and it is plain that the longer the time of swarming lasts the greater the loss. But this is not all. During warm summers easterly winds with calm and low waters prevail, when during cold summers, as a rule, strong westerly wind with rough water is usual. The current in the inlet to the basin will then be stronger and more changing, and consequently still more diminish the number of swarming brood in the basin. That the harvest of oysters in such a basin during a cold summer may be very insignificant or perhaps a total failure is easy understood. One thing of great importance to the oyster-breeding is to find out the reasons why the oysters in different years attach themselves on different depths. Two factors seem to account for this, namely, the saltness of the water and the temperature. Which one of these is the most important I cannot at present say, and a reliable result can only be arrived at from satisfactory and large experiments in the course of years. If this question is solved, so that one only by the help of the thermometer or the areometer can give the depth at which the traps have to be put, much useless work can be done away with and a security in the whole oyster breeding be assured. Besides these, there are a number of other questions to be solved, which I now, from lack of means, am unable to determine.

7. How the Hatchery has Solved its Problems.

The hatchery was erected and put into operation to find some means to restore the number of fish at our coasts.

The first questions to answer were:—

1. Can artificial hatching be carried on under any circumstances?

2. Can the hatching be carried on on such a large scale that through its help it may be expected to increase the number of fish?

3. Can the work be done so cheap that full value may be expected from the money laid out?

After five years' operation, the reply is as follows:—

Saltwater fish can, without difficulty, be hatched. Yearly thousands of millions can be produced, and when all the information gained is utilized, 8 days' old cod can be sold at the rate of 4 ore per 1,000.

Besides this, the original problem, the hatchery has shown the possibility of hatching and breeding lobsters, which before this was considered impossible, and it has furthermore carried the oyster culture in on a track which, if everything goes as up to this, will make this a national industry and provide many families with a paying extra income. When to this is added that the hatcherv in no way has been a failure, and that none of the money spent has been thrown away, it must be acknowledged that the hatchery of Flodevigen in every way has solved the problem in a most satisfactory manner.

That the operations just now concluded should have been able to increase the number of fish in any considerable quantity I never expected, as much more, when the large devastations by the eels are taken into consideration. However, the increase of small cod has not only been noticeable but very striking where the young brood were left out, because an unusual large number of small cod have been caught in those places during the last years. During the first time the young fish were put out in Flodevigen, Hovekilen and adjoining bays, during the two last years in Tromosund; the results in both places were striking, but the eel nets and a lot of other more rational fishing gear made soon a clean sweep, so that it will soon be as ever before.

The catch of small cod in the so-called boudcayb (shallow waters) has been very great during the two last years; two fishermen with lines have been able to pull up

about 14 dozen per day each boat. Something similar occurred in Hovekilen and in the strait outside, but did not last long. To communicate with the fishermen about the results of the operations of the hatchery is of no use or satisfaction, when most of them consider the hatchery an encroachment upon the rights of the Creator and thus damnable. The information received from that quarter is, therefore, everything but reliable. There are, though, a few who possess sounder powers of comprehension regarding the rights and duties of man, and from them can be heard unanimous testimonials to the usefulness of the hatchery, provided it is carried on on a large scale. My own observations, gradually developed, have convinced me that the artificial hatchery of saltwater fish, especially in our country, with its many closed-in bays and gulfs, will be of great importance to the community if carried on with proper vigor.

8.—Is Artificial Hatching of Saltwater Fish Required.

Not only with us, but from most of the foreign countries, there is a complaint that the fish, as well as the lobsters and oysters, are decreasing along the coasts, and that the fishermen on account of this must go farther out into the sea to make their living. The American Fishery Commission, the extensive experiments of which throw good light on the question, says, among other things: "It may with safety be said that as soon as the white man puts his foot on new discovered ground and commences the so-called civilization the inhabitants of the air and sea and earth quickly diminish in number. The fishes, immensely profuse from the beginning, will first feel the influence, and especially those kinds that belong to fresh water, and whose increase is much more limited. That the reason of this is not a natural and needed use of the animals to satisfy the want for livelihood is shown by the fact, that the original wild inhabitants, who were far more dependent upon the products of nature than the white man, could supply their demand through centuries without a noticeable decrease. It is the frequent shameful destruction in masses, which so often is undertaken merely for a few moment's pleasure or to secure a few; in some instances, only to use parts of the creatures destroyed. As an example, how the number of fish has decreased is given that of shad, there was caught in the Potomac River:—

In 1833	25,500,000
1866	1,326,000
1878	224,000

Of other freshwater fish, there was captured in same place:—

In 1833	750,000,000
1866	21,000,000
1876	12,000,000
1878	5,000,000

In both cases the catch, notwithstanding the improved appliances, is reduced to below $\frac{1}{100}$ of what it was in 1833. Of bass, there was:—

	Lbs.
In 1866 caught	316,000
1876	100,000
1878	50,000

Similar proofs of the decrease of the saltwater fish can be given in great numbers. During the first days of the Republic the fish were swarming along the Atlantic coast, when now, on the contrary, they are pretty scarce. Hatteflyndrau (*Hippoglorue vulgaris*), which was so numerous once on the New England coast that it was considered a plague by the fishermen, is now nearly all rooted out, so that it must be sought after on the outside banks: Even the Mackerel, whose home is the great ocean, and which thus seemed to have been safe against the destruction, has been made to feel the intrusion of man. The largest catch that was ever brought on shore by the fishermen of Massachusetts was in 1831, when there were 385,000

barrels salted, and which was mostly caught on hooks. In spite of numerous steam boats and other vessels, and a much larger fleet of fishermen, has the largest catch in the '80's been only 305,000 barrels and in 1886, which was a bad year, 65,000 barrels.

One of the best proofs for the decrease of the fish is the decreasing size of them, and on this the American reports gives some information. The statement below shows how large a part of the mackerel caught that each five years has been put down as No. 1 by the Fishery Inspectors.

1865–69	53	per cent.
1870–74	38	do
1875–79	14	do
1880–84	10	do
1885	7	do

The formerly valuable lobster fisheries are now in many places given up, and those remaining diminish year from year. Even the fishermen themselves have come to the conclusion that nothing but the wholesale catching of spawning fish could have caused such results.

The natural oyster beds on the Atlantic coasts of the United States, that hitherto were considered inexhaustible, show now such an alarming decrease that the sharpest rules of prohibition have come into operation for its conservation. In 1860 the market was nearly altogether supplied with oysters from the natural beds, while, on the contrary, in 1886, about 60 per cent. came from private beds. What has been said above in regard to the United States may also be said of the Atlantic coast of Canada. As well known, these are the seats of the greatest lobster fisheries in the world, but which have just as little, as the European, been able to escape the common danger to diminish year after year, and this to such a degree that now there are proposed certain prohibitory regulations, to which I will revert, and which approach nearly total prohibition.

From Scotland, where, during the last few years, a committee of fisheries has been appointed, the same complaint is heard in regard to the decrease of fish, lobsters and oysters. In a letter from the committee received lately, it is stated that the oysters are practically exterminated. Similar reports have been received from the most different countries, as well as in outside Europe; but I suppose that what has been said above is sufficient to show that a decrease in the number of fish on our coasts is nothing singular, but an exhibition to be found all over, and which draws the attention of the respective authorities. In regard to our home circumstances, it would be expected that they should be well known, but this is, however, not the fact. There are persons yet who, by looking at the residue in the cauf at their wharves, consider that they have sufficient proofs that there is yet enough fish in the ocean, and who do not know or do not wish to know that the number of the fish has increased with the growing efficiency of the fishing appliances, and that a considerable number of fish is imported from Sweden and Denmark.

When to this is added that our natural oyster grounds are destroyed, and that the export of lobsters during the last 20 years has been down from 1,858,000 to 835,000 which, at the current price, is a national loss of over half a million kroners per year, then an attempt to get these matters corrected must not be considered out of place. One must not expect or entertain any allusion that these things will become better by themselves; when in year after year the capital is spent, it is plain that this as well as the interest will grow less.

When the results of prodigality with the richness of nature commence to be felt in a higher degree, and people slowly get their eyes opened to see that the reproduction cannot keep steps with the increasing devastation, as a rule the nearest means are grasped at, to decrease the catch by means of prohibition. The usefulness of this will, at all times, stand in a decided comparison to the length of the prohibitionand the way in which it is watched. I will give a few samples. If a certain water can stand a yearly assessment of 1,000 fishes, and the owner, to save against

loss, agrees only to fish one month during the year and keep strictly to this agreement, there would be no use of this, supposing there are caught during the allowed period, for instance, 5,000. The stock will in this case always decrease and the owners can rightly assert that prohibition has been of no use. How a real good law becomes valueless through neglected inspection is shown at our salmon fisheries. The law prescribes here a certain size of the mesh of the netting, allowing fish of about 18 inches length to slip through, and this is quite right. But what is the use of such a regulation when the fisher with the small meshed nets catches as many young salmon as he can get hold of when it only has a length of 8 inches, and without grumbling these are sold under the name of "blegers." It is plain that the law in this case is without aim, when the just mentioned abuse is so common, that after my experience there are in this district many more young salmon under than over 18 inches length caught. When prohibitory laws on account of above named reasons and others so seldom have proven themselves to be of use, and as a consequence come into discredit, especially amongst the fishermen, who say that the more prohibited the more the fish disappear. That this in most cases is true cannot be denied, but the reason for this is not that there is prohibition, but that the prohibition is not strong enough. To cause any perceivable increase in the number of fish through prohibitory laws alone is very doubtful, or rather impossible, as for many districts or fisheries nothing but absolute prohibition during a longer period could produce results so that a reasonable catch in the future could satisfy the daily want. With us, where the daily fisheries plays such an important part, these arrangements with prohibition would be impossible, and there remains nothing but either to allow the fish to gradually diminish until totally destroyed, or use the artificial hatchery. The best proof that in foreign parts people have got their eyes opened to see that the case is as above stated, is the eagerness with which they seem to explore the causes. Expeditions sent and sustained by the different Governments and provided with scientific and practical expedients have been employed for some years and have already produced rich results and assisted in explaining many hitherto enigmatical problems in regard to the ocean and its inhabitants.

Regarding the main question, the reasons for the decrease of the fishes, as well as other useful sea animals, it has been agreed upon that increased consumption, mainly caused by improved means of communication, has caused a stronger assessment than the stock could bear, and consequently a decrease takes place. On the other hand, the statistics of fishery has shown what enormous interest is at stake, and strongly urged that the respective Governments take steps to correct the matters in an energetic manner. In regard to this, how it can be done, the well known Prof. Spencer F. Baird says, that there are only two ways towards the increase of the fisheries, and that is, strict prohibitory laws or artificial hatching. He says that one of these may, in single cases, be sufficient to reach the desired aim, but by using both one gets the power to restore the fishery to its old position, and, on the whole, produce results that, without the experierience gained during the last ten years, would have been considered impossible. That the professor does not stand alone in his opinion is shown by the many existing hatcheries, in different methods, that have commenced operations, or are planned, and which will give this business an importance never before thought of.

The United States have now two hatcheries in operation for salt-water fish designed to produce each 100 millions at a time, which, when the work is extended over the whole spawning season, is equal to a yearly production of about 500 millions. Of lobsters there is a quantity hatched, both for output on the Atlantic coast and to send to the Pacific, on which coast it is desired to be introduce them.

That in Newfounland it is intended to follow the same plan, is seen by an enquiry received, asking for a man well posted with the labors of a hatchery to take the place of manager in such an institution.

In Europe this one was the first institution of its kind, and has been, during its short duration, visited by many foreigners seeking information.

A hatchery for lobsters is now under construction in Durham, England, and is expected to commence operations next summer. It is calculated to cost about Kr. 30,000, and it is built for the Government. A sample apparatus was sent from here some time ago, and by what is known as my method to be used,which is clearly proven by the fact that I have been requested to go over there when the work is to commence.

The Marine Fisheries Society of Grimsby is constructing a hatchery for salt-water fish, to commence operations this winter if possible. The secretary of the society, Mr. A. T. Olson, visited our hatchery some time ago to get information and advice.

Also, from other places in Europe—for instance, France, Austria, Russia, Denmark, Iceland, etc.—many enquiries have come respecting the hatching operations in their different branches.

Before I finish this chapter I will briefly give a few words as to how in foreign parts the laws of prohibition are, and in what way they are enforced.

In the United States, the history of which is so short, and where the results of spawn fisheries can so easily be seen, the regulations prescribed are very strict. I may say, for an example, that the punishment for having put out during time of prohibition one so-called pound (a kind of net) is confiscation of the implements, $1,000 fine and six months imprisonment. For having brought on shore mackerel during the time from 1st March to 1st June, caught otherwise than with hooks, the punishment is the loss of the catch and loss of license to carry on fishery.*

Quite lately a collision took place between some fishermen who were fishing oysters on prohibited beds and one steamer of the inspectors. The result was that two schooners were sunk, four were driven aground and one captured; nine of the oyster fishermen, who were looked upon as pirates, were drowned, and some were wounded. In Canada, as is above said, proposition made to restricted prohibitory rules for lobsters, which stipulates that the time for fishing would be limited to two months in the year. The half of the number of the members of the committee proposes furthermore that the minimum length, which is now 9½ in., shall be increased to 10½ inches, and that all canning factories for lobsters in Canada be closed for a period of from three to five years. When it is said that the number of these latter are about 500, with a ground capital of about $1,000,000. it is easily understood, that there is really danger ahead. In 1886, over half of the factories in Prince Edward Island had to be closed for want of lobsters in the middle of July. Compared with above mentioned strict regulations, our laws, with their insignificant fines and want of superintendence, look rather innocent. The main contention of all above said is this, that the number of fish at the coasts of all civilized countries are rapidly declining, and that the laws of prohibition, as generally put in force, never will be able to stop this decrease, but only delay the total destruction. I find, therefore, and may once more say it, that the only way that we can find to save what we have and to effect an increase is artificial hatching.

9.—What Remains to be Done.

To continue with experiments after the problems that caused them were solved in a satisfactory manner is, according to my ideas, a superflous labor. What to do, is to get proofs that artificial hatching of salt-water fish also is able to increase the quantity of fish, and for this purpose the present hatchery is too small. When I therefore, repeatly, have proposed the extension of the hatchery, and now strongly urge the same, it is because I feel sure that it will never fill its destiny to such a degree that this matter will gain the assistance of the public, which I consider absolutely necessary if it will ever be, what it ought to or could be, a blessing to the coast inhabitants.

If it was thus that the expenditure rose in the same degree as the production, people might be right to entertain doubts, but this is far from the case. In my

*This law was proposed in the House of Representatives on 21st May, 1886, and also passed through the Senate, and, as far as known, is probably in force now.

report for last year I gave an average calculation of what the production of brood would cost in hatcheries of different sizes, which is below:—

30	millions	will cost	Kr. 5,000,—	thus	$16\frac{2}{3}$	ore per	1,000
100	do	do	6,500	do	$6\frac{1}{2}$	do	1,000
200	do	do	8,000	do	4	do	1,000

If the hatchery is removed, as proposed, the expenditures will be still more reduced, and, to a considerable degree, this saving will be accomplished in two months —first, directly from the method of working being cheaper, and then indirectly that the mortality becomes less and the gain consequently larger for the same amount of work. Would a person calculate further, it will be seen that where there is now produced 3,000,000 to a price of $16\frac{2}{3}$ ore per 1,000, the hatchery will, after the extension, produce the balance of 70,000,000 for $1\frac{1}{2}$ ore per 1,000. Taking these numbers into consideration,it must be admitted that if it pays to run a smaller hatchery it will do so to a much greater extent with a larger one.

From one source has been heard the saying that the hatchery in its present extension is large enough, but this is not easy to understand. If the intention was only to supply a single closed-in bay with brood, this assertion may have its reasons, but not when our long-stretched and our depleted fishing coasts are taken into consideration. Here may the saying fit in—the more the better.

Besides the number of hatched brood, which, according to above statement, causes the said expenditure, one gets for the same money received the work that the manager can perform outside the time of hatching, and which, if he is fit for his position, can be of great importance to the fisheries. In regard to myself, I beg to refer to my experiments with lobsters and oysters, which have cost hardly anything, and consequently, when the building is removed closer to the basins, such work will be performed in a larger degree, as the necessary quantity of water then can be taken from the basins, the contents of which, however, has to be renewed from time to time.

In regard to the future work, I wish to propose that after the hatchery is removed and extended the cod hatching be again taken up on the largest possible scale, and then that the experiments with hatching and breeding of lobsters may be continued on a smaller scale, if possible, to introduce improvements in the method of working. Finally, oyster culture should be tried for two years in the proposed new basin, and their breeding in a similar long period. If the work brings forth good results, which, to judge from work done up to this, is most probable, we may then be able to direct the public as to the most advantageous method in the business, and with this the work of the hatchery may be said to have finished. Later on experiments ought to be made with the breeding of the hatched cod-brood, thus, that it reached a length of about 1 inch before being liberated, and thus much be gained. This breeding ought to be done in a bay separated from the sea of a couple of fathoms' depth and would hardly cost anything. The most important improvements to overcome the worst difficulties have all been planned, and the reason that I will not explain them now is that this question is only for publication when reply has been received (regarding the future of the hatchery and its cause) to these my above proposed plans.

10.—Who Pays the Expenditure of the Hatchery at Flodevigen.

That there appears, in this era of inventions in which we now live, manifold propositions more or less suitable to the assistance of industry, is plain, and it must not be considered asking too much if those making the propositions, and who believe themselves to work for the general good of the people, believe themselves also entitled to some support to have their plans realized. In this they do not succeed well, as the Government, as a rule, and of course, rightly enough, takes a watchful position before new and doubtful enterprises, and only renders its assistance in connection with and on account of the utterances given on the subject from that quarter which

will be benefited by the work. That such an order, referring to the great carefulness with which, in this country, new ideas are met with, in some single instances may stop or delay the introduction of new improvements, is true, but on the other hand it has many advantages. The issuer of those propositions is then forced to look to the great public, and especially to that class of people he will through his invention be of most use to, and who understand the thing best of all and its possible practical usefulness.

The change of opinions taking place thus between the opposition and the defence opens up his eyes, and causes him to look at the thing from other sides and in a new light. If the plan be practicable, and the inventor has succeeded in convincing the public of this, and its being of great importance to the community, it will seldom occur that it will be dropped for lack of assistance, provided not too much money is required for its realization. The practical experiments then commenced leave the decision altogether to the public. If these fail, the cause will soon be given up by that side; if happy results are met with on the other hand, the cause has gained a place in the practical life and will cause itself to be acknowledged. With these suppositions I took up the question of artificial hatching of salt-water fish, which, looking at the great decrease in our daily fishery, was greatly needed.

I turned with my petitions for money contributions, first to private gentlemen and corporations, and not in vain.

The income of the hatchery has been, up to the end of 1888, Kr. 43,000—of which Government assistance.

1884,	through the Fishery Society	Kr. 2,000
1885,	do do	2,000
1887,	de do	2,000
1887,	through Parliament	2,500
1888,	through the Fishery Society	3,500

Thus, Government assistance, Kr. 13,000.
Private assistance, Kr. 30,000.

In this sum is included Kr. 2,000 from the Royal Society for the Welfare of Norway. I believe thus to have fulfilled the common rule in a case like this—to have principally, with assistance of private contributions, brought the thing so far that its practicability is proven, when the reasons that caused the construction of the hatchery always are at hand and never, either in foreign countries or here, was there any other or better means found to restore the quantity of fish than artificial hatching. It is plain that the work ought to be continued, and then comes the question, who will in the future have to defray the expenses. The last five years' statement from the bailiff in Nedeuces shows that the coast district of the bailiwick have together a population of 42,600 inhabitants. If to this is added the poplation of the villages, the total number will be above 50,000 souls who thus can be said to have an interest in the daily fishery.

The gain of this, as well as the indirect advantages of a rich supply of fresh fish, is so evenly dealt out that, outside of this, the original fishermen cannot be said to make a great pecuniary gain. On the whole, this matter is of the greatest importance. If it is supposed that the above-named 50,000 people form 10,000 families, and each of them uses about 80 ore worth of fish per week, the total amount for the year will amount to 400,000 kroners. This only refers to the bailiwick of Nedeuces. In the country between the Swedish boundary and Lindosuœs, along the coast, where the number of inhabitants is about 400,000 individuals, the value of the consumption as above would amount to close upon three and a-half millions, and for the whole country to about six million kroners per annum. It is thus this income which is on the decrease, and which is to be saved. To look to those men who, with such liberality seldom seen, have helped the undertaking over the first and worst difficulties, will not do. They have shown their interest in the matter, and this is the only correct way, namely, by assisting at one time so plentifully that the work could be per-

formed in a satisfactory manner. This has, more than anything else, helped to reach satisfactory results. To petition the great public is of no use, as every single individual, when asked for a pecuniary help, considers the question out of his line; also it is impossible to ask for assistance, by contributions, from the community of surrounding villages or districts, when this question is not yet quite clear to the public generally. First there must be such plain proofs produced of the usefulness of the hatchery that all doubts and opposition are silenced; but this can never be done with the hatchery in its present state. As the daily fishery is of such an enormous importance, and private voluntary contributions to any extent can no longer be expected to run the hatchery in the future, it seems but rea sonable that the Government should now take up the case or rather allow a sum yearly sufficiently large to run the hatchery without the help of private people, except what comes in as contingencies from the members. This is also the rule for the Fishery Society of Bergen, as well as other branches. That this branch at Arendal is in need of assistance to larger extent is a consequence of its greater operations. In the yearly report for 1884, page xi, the Fishery Society says, in regard to this matter: "Should these experiments fail, this allowance will probably be taken away in five years. If again successful there will arise the question to establish similar hatcheries in other places, and as no individual is specially benefitted by it, but the matter becomes an interest of the public generally, and consequently should be kept up by public funds. If the society, by saying public funds means exclusively allowances from the Government, I may say that I cannot agree to that. I know the disposition of the coast inhabitants, and feel sure that as soon as the increase of the number of fish through the operation of the hatchery is proven, the different districts will gladly contribute towards the running of the new established hatcheries. But to produce these proofs is in the hands of the Government. For instance, some would say that too much is expected from the Government. I will give a comparative statement between the salmon and fresh-water fisheries on one hand and the daily fish and lobster fisheries on the other. The value of the first named is, if I remember right, put down to about 800,000 kroner per annum, when the income of the daily fishery may be put down to about six and the lobster fishery to about one million, or about seven million kronor per annum. The salmon fisheries are pursued principally by well-off persons, while, on the other hand, the daily fishery is what may be called the daily bread of the poorer inhabitants of the coast. The salmon fisheries form, truly enough, a valuable export article, but the same can be said about the lobster fisheries, the amount of both being about the same. In regard to the daily consumption, then the salmon is a luxury that only comes upon the table of the wealthy, while, on the contrary the daily fishery forms such a valuable and common industry that, for the coast, inhabitants, it may be considered an article of exigency. The daily fishery may then be said to be of far more economical importance to the country than the salmon fishery, and when to these latter during a number of years considerable sums (in 1888 23,940 kronors) have been allowed, it cannot be considered too much to be asking a yearly allowance of seven to eight thousand kroners towards the hitherto neglected daily fishery.

(Signed) G. M. DANNEVIG.

Flodevig, February, 1889.

REPORT

OF

Mr. William Gunn, of Walkerton, Ont., and Mr. M. G. McLeod, of New Haven, N.S.

APPOINTED TO ENQUIRE INTO THE

HERRING FISHING INDUSTRY

OF

GREAT BRITAIN AND HOLLAND.

1889.

OTTAWA:
PRINTED BY BROWN CHAMBERLIN, PRINTER TO THE QUEEN'S MOST EXCELLENT MAJESTY.

1889.

To His Excellency the Right Honourable Lord Stanley of Preston, P.C., G.C.B., &c., &c., &c., Governor General of Canada, &c., &c., &c.

MAY IT PLEASE YOUR EXCELLENCY:

The undersigned has the honour to present to Your Excellency the Special Report of the delegates appointed in 1889 to enquire into the Herring Fishing Industry of Great Britain and Holland.

All of which is respectfully submitted.

CHARLES H. TUPPER,
Minister of Marine and Fisheries.

OTTAWA, 1st February, 1890.

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WALKERTON, 2nd December, 1889.

Hon. CHARLES H. TUPPER,
Minister of Marine and Fisheries,
Ottawa.

SIR,—I have the honor to transmit the joint report of myself and Mr. M. G. McLeod, appointed delegates under Order in Council of 27th June last, to proceed to Scotland and Holland to inspect and enquire into the methods of catching, curing and packing herring in those countries.

This report contains considerable matter, original and extracted, bearing upon every point connected with the herring fishing industry, including sketches of its history and struggles; discussions on controversies from time to time arising; deliverances of commissioners appointed by the British Government at various times to investigate important questions affecting the subject, all contributing towards the adoption of the modes at present in vogue in Great Britain of curing, supervising, inspecting and branding herring, after the numerous conflicts through which the industry has passed, from its infancy up to the present time.

The extensive ground covered in the annexed report is due as well to a desire to show what has been done in the past by Great Britain to build up the herring fishing industry, as to anticipate objections which may be urged against any contemplated improvements in this branch of the fishing industry of Canada.

I have the honor to be, Sir,
Your obedient servant,

WM. GUNN.

A. MORTIMER, LITH. OTTAWA.

BOUND FOR THE HERRING FISHING

REPORT

ON

THE MOST APPROVED MODES OF CATCHING, CURING AND PACKING HERRINGS.

To The Honorable
CHARLES H. TUPPER,
Minister of Marine and Fisheries.

SIR,—We, the undersigned delegates appointed to enquire into the most approved methods of catching, curing and packing herrings in England, Scotland and Holland, have the honor to submit the following report:—

In pursuance of our instructions we proceeded from Quebec to Liverpool on the 11th day of July last, and prosecuted our investigations at Liverpool, London, Great Yarmouth, Edinburgh, Glasgow, Loch Fyne, Inverness, Wick, Aberdeen, Fraserburgh, Leith, Hamburg, Stettin, &c., &c.

Before stating the result of our mission, it may be well to refer to and consider the necessity at present, and for a number of years past, existing for the present enquiry. The condition of the herring fishing industry of the Maritime Provinces of Canada, as far back as 1869, may be learned from the following answers made to questions submitted by a Committee of the House of Commons of Canada to practical fishermen, shipmasters, collectors of Customs, fishery inspectors, overseers, and others, in different parts of the Dominion, in reference to maritime and river fisheries, and the inspection of fish.

The following is a copy of Question No. 4, submitted by said Committee, namely:

State the different manners of curing and packing fish, and what way, in your opinion, improvements in curing and preparing might be made.

Answer of—

Mayor Painchaud, of the Magdalen Islands:

"The fish are badly prepared. This is because the fishermen do not know how to do better. Old customs are hard to alter. The curing would be improved if inspection was compulsory, before the fish was sent to market."

J. W. Fox, Collector, Magdalen Islands:

"In my opinion, great improvements are required and ought to be made here to give the fish a better character than it now bears. This could only be done by the merchant giving more encouragement to the fisherman making a superior article, and by the Government giving an annual prize or bonus to the boat or vessel bringing in the largest quantity and best quality of fish, and by the erection of proper curing houses and flakes, and more attention being paid to the handling, splitting and curing of cod, as well as splitting, salting and curing herring."

Hon. J. Ferguson, Senator, Bathurst:

"The fishermen should be required to salt and pickle herring immediately after removing them from the nets. By the present system herring are landed before being cured, and being thus out of salt from six to twenty-four hours the quality becomes deteriorated in consequence."

Mr. Mathews, Fisherman, Létête, N.B.:

"Herrings are salted loosely in casks or barrels, using about half a bushel of salt to the barrel. In four or five days after the salting they are re-packed in tight barrels, a layer of herrings and then a layer or sprinkling of salt being placed till as many are placed in the barrel as it will hold (about the same quantity of salt being used as before). The barrel is then filled with strong pickle."

Mr. Heney, Fisherman, Deer Island:

"All herring caught here are cured in pickle, either for packing or smoking."

Mr. Tory, Guysboro', Fisherman:

"Improvement might be made in curing fish if proper care was taken, and the fish had to pass through the hands of proper inspectors and cullers. Improperly cured fish would not then find purchasers, and this would compel fishermen to take more pains in curing."

Collector Tremain, Port Hood:

"Fish are cured here by salting, and drying, and pickling. I know of no improvement *except more care in the curing.*"

Collector Ruggles, West Port:

"Herring should be all opened with a knife and *filled with salt;* otherwise they cannot be properly cured."

Collector Ratchford, Parrsboro':

"No established method of curing."

Mr. Gordon, ex-Fish Dealer, Pictou:

"It is the universal practice of the Nova Scotia fishermen to steep the fish for hours in water before salting down, and expose to the action of the sun, during the hottest period of the season, until the water becomes warm, under the erroneous impression that they are thus benefited by the extraction of the blood.

"Although pickled fish may be cured after the most perfect manner, unsuitable materials used for the package will render them to a great extent valueless, and although the barrels may be made by professed coopers, and of the best materials, if not carefully handled in shipping and stowage will sustain damage that cannot be afterwards remedied."

C. C. Fox, Collector, Gaspé Basin:

"As all pickled fish is prepared by the fishermen themselves, you cannot see what the barrel contains; and the system of large advances in vogue in the fishing districts induces the merchant to take gladly anything he can get, to help liquidate his debt, *without being particular as to quality.*"

The answers above given to the questions above quoted afford abundant evidence of the very unsatisfactory condition in which much of the pickled herring of the Lower Provinces reached Quebec and Montreal in 1869. At this distance of time it is impossible to say what degree of improvement followed the exposure of the state of the herring trade as indicated by those answers. But whatever it may have been, it is evident that there has been a relapse, and that the condition of much of the herring reaching western Ontario of late has been very inferior in quality.

Enquiries instituted during last winter among wholesale and retail dealers established the fact that the herring barrel at present in use in the Maritime Provinces is deficient in strength and incapable of standing the rough usage to which it is exposed in the course of transportation, for long distances, by the railways; that consquently, in the majority of cases a part of the chine, breaks or a stave dinges in, thus permitting the brine to run off, and so causing certain and serious deterioration of the fish—that this deterioration is accelerated and intensified in all cases in

which the herring have not been gutted, the result in such cases being quick decay and putridity; and in the case of properly gutted herring, rust, which renders the fish hard, bitter and unfit for use. In Scotland we ascertained that some years ago herring barrels had been made by machinery. Captain Clarke, to whom we had a letter from the Department, was absent from Glasgow all the time we were there, but we obtained from the Captain of the "McBrayne" steamer on Loch Awe, satisfactory information concerning these barrels. He had commanded a steamer on the West Coast of Scotland, and had carried from Glasgow to Stornaway, and other ports many hundreds of these machine made barrels for Glasgow firms engaged in the herring trade. They were used for a very short time, having been found insufficient, too weak and not tight enough. They were found quite unsuitable for the trade, and their use was totally abandoned. Another fault in the curing of Lower Province herring complained of by retail dealers and customers, is the inordinate and unnecessary quantities of salt too frequently used, especially in the case of the unbranded herring, by which the nutritious qualities of the fish are entirely destroyed and the fish rendered quite unsuitable for food. An experienced retail dealer pronounced large quantities of Lower Province herring as being quite unfit to eat. These enquiries established the fact that only a comparatively small percentage of herring barrels reached western retail dealers in a sound state, and also the further fact that the condition of the herring was seriously interfering with the sale of the fish, rapidly destroying the demand for it and driving it out of the western markets. This has been the case as far west as Minnesota, in the United States; a prominent gentleman from that State having informed us in Edinburgh that much of the herring reaching that State from the Maritime Provinces, was unfit for use, and that if Labrador herring were put up and cured as well as the Scotch herring, there would be a very great demand for them, not only in Minnesota, but also in the other Western States.

An intelligent New Brunswick fisherman, writing under date of 17th May, 1889, says :—

"Our fish are put up in a shameful way. Most of the fishermen use more salt than is needed. One object is to cheat; the other is careless neglect. The fish remain so long out of the water before they go in the salt that it is impossible to cure them. Then the fishermen fill the barrel half full of salt, under the mistaken idea that the injury done in this way will be remedied, and that the fish will be all right. Our barrels are got up cheap—45 cents for large and 25 cents for half barrels. They are made of poor stuff—staves too thin, with poor hoops. There is not much money in the herring trade for the honest fisherman, as bad fish bring the same price as the good. For that reason the fisherman is careless. We put up a lot of fish last year (1888) well cleaned, washed, good and sweet, 100lbs. in each half barrel, with half a bushel of salt, and we only received 5 cents a barrel more for them than those who put up bad fish. In fact, the fisherman is not encouraged. The fish merchant buys of the fisherman in large packages; then he re-packs into half barrels, making a gain in quantity, and so the consumer is cheated right and left."

In a letter dated 26th April, 1889, from a gentleman in Nova Scotia of much experience in the herring trade, while virtually admitting the weakness of the herring barrel now in use in the Maritime Provinces, the writer is of the opinion, as we are, that more careful handling on the railways would obviate many of the evils arising from the breakage of chines and staves. He says: "The package can be made stronger, if that be found necessary."

With regard to the excessive use of salt, he says: "That it is a well-known fact that it requires a bushel and a-half of salt to cure and pack one barrel of herrings, and when more than this quantity is used there must be shortage in the weight of fish—as the barrel commonly used for exporting the article is made with a view to hold this quantity, and no more—and that if enough salt is used in some cases, as alleged, to cure two or three barrels of herrings, it must be evident that the full weight of fish cannot be in the package. For instance, the ordinary herring barrel, as required by law, will of itself hold only three and a-half bushels, and if, after the

herring is taken out, enough salt remains to cure one or more barrels, the package would be one-fourth or more filled with salt, and as a consequence could not contain the proper quantity of fish, as by law required; so that something must be wrong here."

As to the color of the brine, and the offensive smell so frequently complained of by retail dealers and consumers, the same gentleman says: "In the first place, when in consequence of carlessness the fish is poorly or only half washed before salting, the blood still remaining in the fish will come out after salting and give the brine a dark color; and, in the next place, if the fish is not properly salted, or has an insufficient quantity of that article, it will become tainted, and have an offensive smell. This, however, can be soon discovered by tasting the fish, or by breaking it open, when it will be found tainted at the bone, and unfit for use. But all this can be obviated by exercising proper care in handling the fish in the first place; by washing thoroughly, and afterwards using the proper quantity of salt in order to cure perfectly. An over quantity of salt, however, is not desirable, as it dries up the fish, and destroys the nutritious qualities of the herring in a marked degree."

On curing herring, in general, this gentleman says: "Certainly every care should be taken to cure the fish properly, and every step taken in this direction is laudable and worth considering. Could we get our people educated up to a proper standard of curing, it would be a great matter. But they have a great deal to learn, and it is almost impossible to get our fishermen to understand this, yet I hope the time is not far distant when more successful efforts will be made to teach them, as there is no denying the fact that our system of curing fish has been found faulty."

In a letter dated 17th April, 1889, from a large wholesale house in western Ontario, that deals extensively in sea herrings, the wish and hope are expressed that a stronger barrel may be introduced, and that Labrador and all other herrings will be properly gutted and cured before packing.

From the foregoing, it clearly appears that great inefficiency, imperfection, carelessness, and misapprehension still obtain in the Maritime Provinces as to the curing of herring. And, in the face of the very strenuous efforts, now, and for some years past, made by those nations of Europe interested in the herring fisheries to push the sale of their herrings in all markets, it need not surprise us to find that our exportation of herrings from Canada has seriously declined during the last three years, as the following statement of exports for 1885, 1886, 1887 and 1888 plainly shows:—

GENERAL STATEMENT of the Quantity and Value of Pickled Herring Exported from the Dominion of Canada during the following years :—

1885.

ARTICLES AND COUNTRIES TO WHICH EXPORTED.	PROVINCES WHENCE EXPORTED.	GOODS, THE PRODUCE OF CANADA.		GOODS, NOT THE PRODUCE OF CANADA.		TOTAL EXPORTS, PRODUCE AND NOT PRODUCE.	
		Quantity.	Value.	Quan'y.	Value.	Quantity.	Value.
		Brls.	$	Brls.	$	Brls.	$
Great Britain	Quebec	27	75	.....	.....	27	75
	Nova Scotia	19	76	.....	.....	19	76
	New Brunswick	346	806	.....	.....	346	806
		392	957	.....	.....	392	957
United States	Ontario	10	40	1	7	11	47
	Quebec	11,376	28,671	1,102	6,278	12,478	34,949
	Nova Scotia	66,511	200,594	.....	.....	66,511	200,594
	New Brunswick	20,488	61,200	.....	.....	20,488	61,200
	P. E. Island	5	29	.....	.....	5	29
		98,390	290,534	1,103	6,285	99,493	296,819
Newfoundland	Quebec	57	117	.....	.....	57	117
	P. E. Island	.....	.....	124	496	124	496
		57	117	124	496	181	613
B. W. Indies	Quebec	329	680	.....	.....	329	680
	Nova Scotia	30,084	101,436	.....	.....	30,084	101,436
	New Brunswick	1,182	2,908	.....	.....	1,182	2,908
	P. E. Island	2	7	.....	.....	2	7
		31,597	105,031	.....	.....	31,597	105,031
S. W. Indies	Nova Scotia	14,820	49,431	.....	.....	14,820	49,431
D. W. Indies	do	1,285	4,499	.....	.....	1,285	4,499
F. W. Indies	do	1,589	5,318	.....	.....	1,589	5,318
British Guiana	do	2,997	7,322	.....	.....	2,997	7,322
Germany	do	7	20	.....	.....	7	20
Portugal	do	5	20	.....	.....	5	20
Brazil	do	10	50	.....	.....	10	50
Madeira	do	20	90	.....	.....	20	90
Total	Ontario	10	40	1	7	11	47
	Quebec	11,789	29,543	1,102	6,278	12,891	35,821
	Nova Scotia	117,347	368,856	.....	.....	117,347	368,856
	New Brunswick	22,016	64,914	.....	.....	22,016	64,914
	P. E. Island	7	36	124	496	131	532
		151,169	463,389	1,227	6,781	152,396	470,170

GENERAL STATEMENT of the Quantity and Value of Pickled Herring, &c.—*Continued.*

1886.

ARTICLES AND COUNTRIES TO WHICH EXPORTED.	PROVINCES WHENCE EXPORTED.	GOODS, THE PRODUCE OF CANADA.		GOODS, NOT THE PRODUCE OF CANADA.		TOTAL EXPORTS, PRODUCE AND NOT PRODUCE.	
		Quantity.	Value.	Quan'y.	Value.	Quantity.	Value.
		Brls.	$	Brls.	$	Brls.	$
Great Britain	Quebec	113	440	.....	.....	113	440
	Nova Scotia	275	999	.....	.....	275	999
		388	1,439	.....	.....	388	1,439
United States	Quebec	632	1,959	4	16	636	1,975
	Nova Scotia	18,236	50,085	.....	.....	18,236	50,085
	New Brunswick.	9,423	26,096	.....	.....	9,423	26,096
	P. E. Island	8	32	.....	.....	8	32
		28,299	78,172	4	16	28,303	78,188
Germany	Nova Scotia	75	225	.....	.....	75	225
Portugal	do	100	230	.....	.....	100	230
B. W. Indies	Quebec	55	112	.....	.....	55	112
	Nova Scotia	23,593	72,392	225	572	23,818	72,964
	New Brunswick.	8	24	.....	.....	8	24
		23,656	72,528	225	572	23,881	73,100
S. W. Indies	Nova Scotia	12,501	37,166	150	450	12,651	37,616
F. W. Indies	do	632	1,353	.....	.....	632	1,353
D. W. Indies	do	1,089	3,272	.....	.....	1,089	3,272
British Guiana	do	2,205	7,559	.....	.....	2,205	7,559
	New Brunswick.	150	413	.....	.....	150	413
		2,355	7,972	.....	.....	2,355	7,972
Brazil	Nova Scotia	5	10	.....	.....	5	10
Newfoundland	Quebec	1	4	.....	.....	1	4
	Nova Scotia	109	127	.....	.....	109	127
	P. E. Island	20	20	101	305	121	325
		130	151	101	305	231	456
St. Pierre	Nova Scotia	16	52	.....	.....	16	52
Madeira	do	10	35	.....	.....	10	35
Total	Quebec	801	2,515	4	16	805	2,531
	Nova Scotia	58,846	173,505	375	1,022	59,221	174,527
	New Brunswick.	9,581	26,533	.....	.....	9,581	26,533
	P. E. Island	28	52	101	305	129	357
		69,256	202,605	480	1,343	69,736	203,948

GENERAL STATEMENT of the Quantity and Value of Pickled Herring, &c.—*Continued.*

1887.

ARTICLES AND COUNTRIES TO WHICH EXPORTED.	PROVINCES WHENCE EXPORTED.	GOODS, THE PRODUCE OF CANADA.		GOODS, NOT THE PRODUCE OF CANADA.		TOTAL EXPORTS, PRODUCE AND NOT PRODUCE.	
		Quantity.	Value.	Quan'y.	Value.	Quantity.	Value.
		Brls.	$	Brls.	$	Brls.	$
United States	Quebec	1	4			1	4
	Ontario	1,645	3,365	100	500	1,745	3,865
	Quebec	1,413	4,854	260	930	1,673	5,784
	Nova Scotia	20,310	72,971	827	3,314	21,137	76,285
	New Brunswick	10,017	34,849			10,017	34,849
	British Columbia	1	8			1	8
	P. E. Island		3				3
		33,386	116,050	1,187	4,744	34,573	120,794
France	Nova Scotia	45	135			45	135
B. W. Indies	Quebec	57	139			57	139
	Nova Scotia	21,024	80,777	100	216	21,124	80,993
	New Brunswick	38	133			38	133
		21,119	81,049	100	216	21,219	81,265
S. W. Indies	Nova Scotia	10,787	32,858			10,787	32,858
F. W. Indies	do	291	1,013			291	1,013
D. W. Indies	do	822	2,804			822	2,804
B. Guiana	do	2,389	8,502			2,389	8,502
Newfoundland	Quebec	576	2,041	256	512	832	2,553
	Nova Scotia	26	56			26	56
	P. E. Island	110	310			110	310
		712	2,407	256	512	968	2,919
Portuguese Poss. in Africa	Nova Scotia	40	188			40	188
Total	Ontario	1,645	3,365	100	500	1,745	3,865
	Quebec	2,047	7,038	516	1,442	2,563	8,480
	Nova Scotia	55,734	199,304	927	3,530	56,661	202,834
	New Brunswick	10,055	34,982			10,055	34,982
	British Columbia	1	8			1	8
	P. E. Island	110	313			110	313
		69,592	245,010	1,543	5,472	71,135	250,482

GENERAL STATEMENT of the Quantity and Value of Pickled Herring, &c.—*Continued.*

1888.

ARTICLES AND COUNTRIES TO WHICH EXPORTED.	PROVINCES WHENCE EXPORTED.	GOODS, THE PRODUCE OF CANADA.		GOODS, NOT THE PRODUCE OF CANADA.		TOTAL EXPORTS, PRODUCE AND NOT PRODUCE.	
		Quantity.	Value.	Quan'y.	Value.	Quantity.	Value.
		Brls.	$	Brls.	$	Brls.	$
Great Britain	Quebec	222	905	.....	.....	222	905
	Nova Scotia	17	74	.....	.....	17	74
		239	979	.....	.....	239	979
United States	Ontario	25	120	.....	.....	25	120
	Quebec	617	2,406	.....	.....	617	2,406
	Nova Scotia	32,151	117,227	5,182	11,969	37,333	129,196
	New Brunswick	2,525	8,164	.....	.....	2,525	8,164
	P. E. Island	71	347	.....	.....	71	347
		35,389	128,264	5,182	11,969	40,571	140,233
B. W. Indies	Quebec	18	45	.....	.....	18	45
	Nova Scotia	26,164	104,744	.....	.....	26,164	104,744
	New Brunswick	59	161	.....	.....	59	161
		26,241	104,950	.....	.....	26,241	104,950
S. W. Indies	Nova Scotia	12,955	49,189	324	1,371	13,279	50,560
F. W. Indies	do	292	1,071	.....	.....	292	1,071
D. W. Indies	do	682	2,698	.....	.....	682	2,698
B. Guiana	do	2,711	9,053	.....	.....	2,711	9,053
Newfoundland	do	.....	.....	3	13	3	13
	P. E. Island	410	1,290	.....	.....	410	1,290
		410	1,290	3	13	413	1,303
St. Pierre	Nova Scotia	81	122	.....	.....	81	122
U. S. of Colombia	do	68	404	.....	.....	68	404
Portuguese Poss. in Africa	do	234	926	.....	.....	234	926
Total	Ontario	25	120	.....	.....	25	120
	Quebec	857	3,556	.....	.....	857	3,356
	Nova Scotia	75,355	285,508	5,509	13,353	80,864	298,861
	New Brunswick	2,584	8,326	.....	.....	2,584	8,325
	P. E. Island	481	1,637	.....	.....	481	1,637
		79,302	298,946	5,509	13,353	84,811	312,299

GENERAL STATEMENT of the Quantity and Value of Pickled Herring, &c.—*Concluded.*

RECAPITULATION.

YEAR.	PRODUCE OF CANADA.		NOT THE PRODUCE OF CANADA.		TOTAL, PRODUCE AND NOT PRODUCE.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Brls.	$	Brls.	$	Brls.	$
1885	151,169	463,389	1,227	6,781	152,396	470,170
1886	69,256	202,605	480	1,343	69,736	203,948
1887	69,592	245,010	1,543	5,472	71,135	250,482
1888	79,302	298,946	5,509	13,353	84,811	312,299

From this statement it appears that the total exports of herrings from Canada were :—

	Barrels.
In 1885	152,396
1886	69,736
1887	71,135
1888	84,811

Making the decreases as follows, from 1886 :—

	Barrels.
In 1886	82,660
1887	81,261
1888	67,585

The decreases in our exportation of herrings for the years named are chiefly confined to two of the countries to which we export herrings—the United States and British West Indies.

Our export of herrings to the United States were :—

	Barrels.
In 1885	99,493
1886	28,303
1887	34,573
1888	40,571

Our exports to the British West Indies were :—

	Barrels.
In 1885	31,397
1886	23,881
1887	21,219
1888	26,241

The significant fact that in the case of both countries the sudden falling off in our exports of herring took place in 1886 shows that the decrease as to the United States cannot be attributable solely or perhaps in any perceptible degree to tariff changes in the duties on herrings in that country. Then to what other causes can we attribute the sudden and permanent decline in our exportations ? Two causes may be assigned. It is possible that the quality of our herring in 1885 may have been exceptionally bad, and this happening concurrently with the opening up of the new trade with Holland in herrings may have tended materially to diminish our herring trade with the United States. The imports of herring into the United States from Germany and Holland in 1888 exceeded the decrease in our exportations in any of the years since 1885.

It is a remarkable fact, and a fact worthy of the best consideration of our Canadian fishermen and dealers, that nearly all the herring exported from Germany and Holland are Scotch-cured herring of the best qualities, carefully selected from the large Scotch barrels, and tastefully put up in neat, fancy kegs of the size of one-eighth and one-sixteenth of a Scotch herring barrel. Now, if we are correct in assuming that the causes named operate in the direction of diminishing our exportations, then it is in our own power to remedy the evil—in the first place, by furnishing a better quality of herring, and secondly by an effort to meet the increasing demand in the United States and some portions of Canada, for what are called Dutch herring.

But besides this, by furnishing an article of herring equal to Scotch herring, the consumption of herring in the interior Provinces of Canada can be greatly increased. It is a well known fact that all peoples living far inland from the sea are fond of salt sea herring, if supplied to them of good quality. Almost every body is fond of a good salt herring now and then, and especially in the winter time. We heard in Scotland of a physician of great skill and experience who advised his patients to eat a salt herring every morning, not simply as an article of nourishing diet, but as having a wonderful influence on the general health of the eaters, and acting on the system in some secret, salutary manner of which he was certain, although unable to explain. In an essay on the herring in 1872, Dr. James Silvis Dodds, of England, says: "The herring is highly medicinal, and good for food in the plagues." He also recommends the oil of herrings as "of excellent service in cramps and convulsions." The extent of the herring trade in Europe proves the universality of the demand for herring among all nations, and the inexhaustible supplies of herring contained in the sea tends to show, in a remarkable degree, the wise and generous beneficence and goodness of the Great Creator. As to the suitability of the herring, when furnished in a sound state, for food, we have only to consider the robust health and longevity of the peasantry of Scotland and Ireland, and other continental countries where herring are largely used as an article of food.

The value of the fish taken in Canada in 1888 was $17,418,510, of which there was exported to the value of $7,793,183, leaving for home consumption the value of $9,625,327, being the greater portion of the entire catch, including the fresh water fisheries of Ontario, Manitoba and British Columbia. It is safe to predict that if our herring were as carefully cured as the European herring that nearly the entire catch of herring in the Maritime Provinces would be consumed in Canada, leaving only a small balance for the United States and the West Indies, thus securing for our fishermen better prices in a market at their door.

From all we have seen and learned, we are satisfied that our herring on the Atlantic coast will compare favorably with the herring of Europe, not even excepting that of the west coast of Scotland, and that all that is needed is the ability to prepare and put them up after the European methods. This it is quite possible to do if our people are willing to learn and to adopt those methods. This can be secured by the dissemination of information, a determination and disposition to learn, and an intelligent, patriotic co-operative effort on the part of all concerned, fishermen, merchants and consumers, press, people and legislators, to make Canadian herring, constituting as it does, such an important element of our national industries, our trade and commerce, second to none in the world, in quality at least.

The following statement, compiled from the Fishery Reports, shows the quantity and value of the catch in the Provinces of Nova Scotia, New Brunswick, Quebec and Prince Edward Island in the years 1886, 1887 and 1888, also the quantity and value of pickled, smoked and frozen herrings, respectively, put up in the several Provinces, together with the names of the principal fishing grounds.

From papers annexed to this statement it will be seen that the price received by the fishermen for herring is very low; also, that under present arrangements, the merchants do not feel warranted in giving higher prices. In answer to one of the questions sent out by the Committee of the House of Commons in 1869, Alex. Cormier, trader and farmer, Amherst, Magdalen Islands, says that in his locality fresh herring at that time sold at one shilling per 200 pounds. The Canadian fish-

erman receives much less for his herring than English and Scotch fishermen receive. Were the herring industry of Canada once placed upon a proper basis the fisherman would receive a higher and more certain price for his fish, and the merchant would secure higher prices and more certain profits.

STATISTICS of the Herring Fishery in the Maritime Provinces, as compiled from the Fisheries Reports.

NOVA SCOTIA.

	1886.		1887.		1888.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		$		$		$
Pickled ..... Brls.	155,750	623,000	181,146	815,157	175,285	701,140
Fresh, frozen. ..... Lbs.	260,700	10,428	No returns.		3,120	312
Smoked ..... Boxes	36,761	9,190	85,910	21,477	33,000	8,250
		642,618		836,634		709,702

NEW BRUNSWICK.

Pickled ..... Brls.	95,180	380,720	82,819	372,685	95,225	380,900
Frozen. ..... Lbs.	21,023,300	126,139	21,986,700	109,933	22,305,500	133,833
Smoked ..... Boxes	1,081,384	270,346	1,478,996	369,749	1,448,250	362,062
		777,205		852,367		876,795

PRINCE EDWARD ISLAND.

Pickled . ..... Brls.	43,204	129,612	38,874	174,933	32,883	131,532

QUEBEC.

Pickled .... Brls.	18,560	74,240	18,938	85,221	16,807	67,228
Smoked ..... Boxes	7,560	1,890	9,762	2,440	8,640	2,160
		76,130		87,661		69,388
Total Value	....	1,615,565	.....	1,951,595	.....	1,787,417

RECAPITULATION of the Catch.

PICKLED HERRINGS—Brls.

	1886.	1887.	1888.	
Nova Scotia	155,750	181,146	175,285	
New Brunswick	95,180	82,819	95,225	Value, $4.
Prince Edward Island	43,204	38,874	32,883	
Quebec	18,560	18,938	16,807	
Totals	312,694	321,677	320,200	954,671

SMOKED HERRINGS—Boxes.

Nova Scotia	36,761	85,910	33,000	
New Brunswick	1,081,384	1,478,996	1,448,250	Value, 25 cts. per box.
Quebec	7,560	9,762	8,640	
Totals	1,025,705	1,574,668	1,489,890	4,190,263

FROZEN HERRINGS—Lbs.

Nova Scotia	260,700		3,120	
New Brunswick	21,023,300	21,986,700	22,305,500	
Totals	21,284,000	21,986,700	22,308,620	

The greatest portion of smoked herrings comes from New Brunswick.
The same may be said of fresh-frozen herrings.
Smoked and frozen herrings are mostly all caught in Charlotte County.

FISHING GROUNDS.

In Nova Scotia, the principal fishing grounds are Digby, Yarmouth, the Strait of Canso, Guysboro' and around Cape Breton Island.

In New Brunswick: Passamaquoddy Bay, Grand Manan Island, Bay des Chaleurs, opposite Caraquet, N.E. part of Gloucester County and Northumberland Strait.

In Quebec: the coast of Labrador and around Magdalen Islands.

CHIEF MARKETS.

Canada and the West Indies.

PRICES OBTAINED.

Pickled herring are generally purchased from the fishermen, who sell them from their vats at so much per barrel. The schooner furnishes the barrels and repacks the fish.

The price paid to the fishermen is on the average basis of $2 a barrel; but this varies considerably, according to circumstances.

(Extracts from Fishery Inspector Bertram's Report, 1887.)

HERRING.

"Though the catch of herring has, in some localities, not been an abundant one, yet the total results of the year's catch in this old and standard branch of the fishing industry shows a gratifying increase of 6,199 barrels over that of last year, together with an increase of 12 per cent in the current market price. The industry of "smoked herring" has not yet attained any importance in Cape Breton. But a new departure in "herring curing" for export has been tried this year, that is, canned herring put up as salmon and mackerel usually are, fresh in cans. Owing to the unequalled excellent quality of the summer herring of this coast, if the experiment of canned herring meets with a favorable reception on public markets, then a new era of profit and prosperity will dawn upon the herring fishery of this island coast. The finest quality of herring is caught on this coast during the middle of the hot season, and, being large and fat, much of it is frequently lost before it can be cleansed and salted. If the canned article proves acceptable to foreign markets, much of the loss heretofore experienced can be averted in the future."

(*Extract from Fishery Inspector Bertram's Report*, 1888.)

HERRING.

"This has proved the staple branch of the Cape Breton fisheries for the year 1888. With two or three minor exceptions, the herring fishery turned out remunerative to a degree that went far to compensate for the loss in other branches. Considering the value of herring as an article of profitable foreign commerce, and as a staple of food for home consumption, the wanton destruction of thousands of barrels of fish on the coasts of this island, annually thrown back in the sea by mackerel seiners, is a most serious matter in the economy of one of the most valuable natural resources of this country. This point will be found more fully referred to in this report under the heading of "Destructive Methods of Fishing." It may be remarked that the summer herring taken on the coasts of this island is unequalled in size and excellence of quality of herring caught on any other coast in North America. This is a local peculiarity of this island, but a never failing one, and this herring always commands two or three dollars more per barrel than other herring in this country. It follows that owing to its being set down at the average price, the true market value of the catch is not by a considerable amount represented in the tables hereto appended.

CANNED HERRING.

I referred to this in my report for 1887 as being then, for the first time, tried as an experiment, which, if it proved acceptable in the market, would in the near future become an important industry in adding to the value of our island fisheries. I am pleased to be able to report that the experiment proved a success, and that the pioneers of the industry received a cordial reception for the product at remunerative prices. Encouraged by the successful issue of the last, they have this year enlarged their canning business, and regard it as being now established on a permanent basis."

The rise and progress of the herring industry in Scotland shows what can be done by a thrifty people under wise legislation and judicious governmental supervision. There was a time in the history of the herring fishery in Scotland when the industry in that country was at as low an ebb as it is with us in Canada now.

In his very interesting work on the herring published in 1864, Mr. Mitchell refers to the wonderful progress made in the fishing industry of Scotland during the last eighty years. He says:—

"The herring fishing has been increasing with steady, as well as rapid progress, since 1808, when the Fishing Board was established. In that year there were cured, in Scotland 90,185 barrels of herring, and in the year ending 1855, 766,703 barrels, besides the quantity caught and sold fresh, 130,759 barrels, making the total quantity of herring caught in 1855, 897,462 barrels. The great increase of this fishery has tended in no small degree to increase the wealth and the number of the population of the Scottish coasts, and the annual addition of the value of the herring trade must have a great and beneficial influence on the prosperity, not only of Scotland, but of the whole British Islands. The addition of nearly one million pounds sterling every year to our national wealth must be extremely gratifying to every patriotic mind. The success of the enterprising inhabitants, at the old curing stations, roused the exertions of the inhabitants of other places where the herring fishery had not been before attempted. While the fishery had been carried on for years previously in the Clyde, in the Firth of Forth, off Berwickshire, and in the northern counties of Caithness and Sutherlandshire, it is only since 1815 that extensive herring fishing stations have been established in Aberdenshire, Banffshire, Morayshire and Rosshire; at Lossie Mouth, Port Roy, Cullen, Portnockie, Findochtie, Portessie, Banff, Whitehills, Macduff, Gardenstowns, Rosehearty, Pitulie, Fraserburgh, Peterhead, &c., and these have become noted places for herring of the best quality, and as such have added greatly to the number, and the wealth, and the prosperity of the inhabitants.

"The increase of the herring fishery depends very much on the demand for exportation, and this demand requires to be carefully cultivated, not merely by the curers, who may be viewed as the manufacturers of the goods, but by the Government, which by impartial and just legislation protects the interests of the fisherman, the consumers at home, and the merchants and consumers abroad. That there was an abundance of herrings on the Scottish coasts was known for centuries past; but when considerable quantities of them appeared, they were of little remunerative value when caught, because the demand was limited to the mere local consumption. Before the specific and legalized size and quality of the manufactured article—the barrel of well-cured herrings—could be obtained as goods for commerical purposes, a merchant abroad could not buy herrings in Scotland, there having been no legal, distinct specific form and quality. The curer might say: My barrels are of every size, and various in quality and price; but the foreigner could not order nor buy such goods, and he therefore bought herrings which were of legalized size and good quality elsewhere; and although he paid a high price he obtained what he wished in Holland and other countries, and these countries are ready to supply any quantity if Scotland should be unable to do so."

"Before a proper system of legislation was adopted in Scotland, and even for some time after the system was introduced, the demand from abroad was inconsiderable; but confidence having been given from years of experience, and the trade based on a solid foundation, under legal enactments fixing measure and quality, the business progresses, and bids fair every year to extend and increase. To prove the progress of the increase we may state that in 1812 the total quantity of herrings exported to the continent was 4,720 barrels.

	Barrels.
In 1815 it amounted to	35,891
1840	82,515
1845	143,754
1850	257,108
1885	344,029

"If any evidence were necessary to prove that a fixed legal standard, applying to quantity as well as quality, is necessary to ensure success, this statement is all that can be wished. But we have more direct and convincing evidence still; for when the curers in Scotland thought any size and quality of herrings would sell abroad, and persisted in attempting to supply foreign markets, the attempts were failures, and the demand for fresh herring being limited, the price was so low as not to induce fishermen to proceed to fish, and there was consequently a limited or losing trade. But additional evidence that a staple article, at a fair price, will obtain its position in the market, is obtained by the account of the importations at one of the principal importing ports on the continent (Stettin) for a series of years past.

"In 1825 there was imported there of white herrings in barrels from:—

	Great Britain.	Holland.	Denmark.	Norway.
1825	18,160	4,295	1,960	6,758
1845	81,189	2,457	307	44,264
1850	116,538	568	470	12,507

"In 1885 the quantity exported to Stettin of Scottish herring was 160,572 barrels, being about nine times the quantity sent from this country in 1825, double the quantity in 1845, and more than a third greater than the quantity exported thither in 1850. There were exported to other places on the continent in 1855 344,029 barrels.

"The number of herring fishing boats employed in Scotland in 1856 was 11,251; the number of fishermen, coopers, &c., 91,139. Of these 91,139 people directly employed, 39,266 are fishermen; but if we add those employed indirectly by the money derived from the fishery, namely, the boat-builders, sail-makers, rope-makers, mast-makers, salt-makers, grocers, carters, porters, shipowners, sailors and other

trades, the number will appear incredible to those who have not an opportunity of closely observing the incalculable benefits accruing to the nation from the prosperous state of such a fishery. Here we see employment to the industrious classes, while they are adding an abundant supply of cheap and wholesome food for the numerous population of the British Islands.

"The great extent of the commerce that arises from the fisheries may be judged of from the number of ships and men employed in importing salt and materials for the fisheries, in conveying the fish on the coasts, and carrying the same to British or foreign ports.

"It would be difficult to give any correct estimate of the capital employed by the fish curers of Scotland; but when it is known that in 1855 there were 1,054 fish curers directly employed in purchasing herrings and curing them for the home and foreign market, it may be supposed that the capital put in circulation must be very great, without reference to the amount circulated by those merchants who principally carry on business in buying the cured herrings.

"The more rapidly the manufactured articles cease to be of use the more employment is afforded to the people; and as the fishing vessels or boats last only a few years, and the nets a shorter time, and as the barrels are generally only available for one year, the continual employment of great numbers of working classes in procuring materials and making them is of no small advantage to the community, and a ready sale is besides afforded for numerous cargoes of hoops from the English, and of stave wood from the Scottish forests, as well as from foreign countries.

"We think it necessary thus to point out not only the great extent, but also the great importance of herring fishery, as proving how much the knowledge of the natural history of the herring is connected with the prosperity of these kingdoms; for without such knowledge this important fishery is in danger of being destroyed."

Although Canada cannot hope to develop such a trade as the herring fisheries of Scotland, yet a great deal can be done to improve the present condition of the herring industry with us, and there is encouragement for us in the foregoing sketch of the rise and progress of the trade in Scotland from 1808 to 1855. But the herring industry has attained to very great dimensions in Scotland since 1855.

To proceed, however, with the purpose and work of our mission, we beg to state that immediately on our arrival in England we waited upon the Honorable the High Commissioner for Canada in London, who procured for us numerous letters of introduction, addressed to fish curers in various parts of Britain; also a letter from the Home Office to the British Consul in Stettin, from whom we received every possible kindness and information. We were also treated most kindly by Mr. Dundas, the British Consul at Hamburgh, although we had no letter of introduction to him. We as soon as possible delivered our letter of introduction to Capt. Graham, Secretary of the Fishery Board of Scotland, who received us most kindly, evinced the deepest interest in the objects of our mission, and furnished us with a general letter adressed to all local fishery officers throughout Scotland. All of these gentlemen upon whom we called were most courteous, painstaking and assiduous in giving us every information in their power—introducing us to fish curers, giving us much of their time, and in every way facilitating the attainment of our purpose. Indeed, we found the fish curers, and all classes engaged in the herring trade with whom we came in contact, ready and willing to give us all the information in their power.

The first great fishing station we visited was Great Yarmouth, England, where the herring fishing on a large scale is carried on. On our arrival there we found ourselves out of the herring fishing season proper, which does not commence there until nearly or about the first of October. Many of the smaller fishing boats were away prosecuting the herring fishing on the east coast of Scotland. From fishermen, owners of boats and fish curers, we obtained much information respecting the herring industry in Yarmouth. We saw herring arrive by trains from Scotland. These herring, well mixed with salt, were put up loosely in barrels. When delivered at the established herring mart they were put up to sale by auction and sold to the highest bidder at so much per last of 13,000 fish. When counted they were again thrown

loosely into the barrels, and at once, without being gutted, dispatched to London and other adjacent cities and towns. The system of putting up pickled herring is the same as in Scotland, and is very carefully done. In fact, many of the Scotch gutting girls go south to Yarmouth, Lowestoft and other fishing towns in that region in the fall of the year, to work at the gutting and pickling of herring there. The greater portion of the herring taken at Yarmouth are either sold fresh or manufactured into bloaters and kippers, for which there is an enormous demand, and of which we shall treat elsewhere.

BOATS.

The style of fishing boat in use in Yarmouth is a three-masted decked lugger, of from 35 to 60 or 70 tons, with lug-sails, top-sails, mizzen, foresail and jib. They are very strongly built, and can remain out in almost any weather. These vessels are fitted up with compartments in the sides amidships, on each side of the hold, carefully secured and water-tight. Before proceeding on the fishing voyage these compartments are filled with the best salt. The most of them have small donkey engines for hoisting sail and hauling in their nets. They go off to fish a considerable distance from land, about midway in the English Channel, where the herring caught are more suitable for bloaters than those taken nearer land. They carry drifts of nets numbering from 200 to 210 nets, measuring each 48 to 60 feet in length, and 30 feet deep. They use only one-half of their nets at one time, reserving the other half to be used in case of losing the other through stress of weather or other casualty. These nets are of a two different-sized mesh, one for the larger herring and one for the smaller. Their system of fishing is the drift net deep-sea fishing, which is the principal mode of catching herring all round the British Isles, except in some of the firths and arms of the sea. These Yarmouth boats go off in fleets and fish not far from each other. They remain out for days, for a week or more, according to the weather, the temperature and the quantity of fish taken. Recently there has been added to the fleets a mission ship for religious service and worship, and a hospital ship, where the sick and injured may have medical attendance. As is the general custom everywhere, the nets are "shot" or set at sundown and taken in at sunrise. As the nets are hauled in the fish are shaken out of them on deck, where the herring are at once well sprinkled with salt, and then shovelled into the hold, where, by means of a raised platform floor, the blood and liquid offal can drain off, leaving the fish clean, firm and sound. When they come ashore the herring are sold by auction, as already stated, and used up either for sale, fresh, pickled, or manufactured into bloaters and kippers, the fresh fish generally being sent to the London market.

The herring fishing boats and smacks on the south coast of England, the Dutch busses, and the French galliots in general all resemble each other in build, differing somewhat in rigging, being all intended for the same kind of work—the deep-sea drift-net fishing—at considerable distances from land. In the north of England, in Scotland and in Ireland, the herring fishing boats are smaller in size. They are strong, staunch, substantial sea-going boats, of good tonnage capacity for the length of keel, and they are easily handled. In some respects, as to model, rigging and cut of sails, the boats of one port in Scotland differ from those of other ports; the boats of one port may be nearly all alike—good, serviceable boats, without much symmetry of form—while those of other ports are built on finer lines, and present a more graceful appearance to the eye. All, however, are well adapted to the work for which they are intended, in the boisterous North Sea and North Atlantic Ocean.

The fishermen of some ports having what they consider superior sea boats, are looked upon as more venturesome, in going to sea in rough weather, than others—a natural spirit of bold daring as well as confidence in the style of boats, may lead to this. The nearness and accessibility of a harbor, in case of rough weather, would, no doubt, be a consideration in such cases. The following is a description of the Wick herring fishing boat, as taken by us from one of the boats:—

A. MORTIMER, LITH. OTTAWA.

SHOOTING THE NETS—SUNDOWN

The herring fishing boats of Wick are now built of a much larger size than formerly. They are from 40 to 60 feet keel, stern and stem posts upright or nearly so, with an average width of from 16½ to 18 feet beam, and from 7 to 8 feet hold, pink stern-lap planked, hollow bottom and very much hollowed fore and aft. They are decked, with a large hatch, the greater part of which is abaft of midship. They are not ceiled, and are rigged with a small jib, a large main-sail and small mizzen-sail. The jib-boom is moveable, and can be taken in and put out as required. There are no stays to it, except a small hemp bobstay, which is made fast to the outer end, and taken under a cleat hook on stem, immediately over the water line, and led on board where it is belayed. The tack of the jib is made fast to the outer end of the jib-boom, and is hoisted without a jib-stay.

The mainsail is made on what we call the lug sail system ; tack fastened to luff-hook on stem head. It is not fastened to mast otherwise than by an iron hook on the yard. It is sheeted aft to the quarter, and when tacking has to be lowered, and set on opposite side. The spar is from 50 to 60 feet long. The peak of the sail when hoisted is much higher than the masthead. The mast is not stayed or supported in any way, other than by the step, and where it is secured in the deck. While fishing the mast is lowered and rests upon a crotch about 10 feet long, which is stepped on the afterside of the main hatch. The mast is lowered by the tackle which hoists the mainsail, which consists of a wire runner and double tackle. To hoist the mainsail, one end of the wire runner is made fast to the yard, about 12 feet from the luff, the average length of the yard being about 36 feet, The other end of the wire runner is rove through an iron sheef in the mast within a foot of the head, and the purchase tackle attached thereto, the other end of the tackle being made fast to an iron strap on the rail on the weather side.

To lower the mast the same tackle is used, by having the end of the runner made fast to the luff-hook on stem head, and tackle purchase made fast to an iron strap immediately abaft the stem head. By heaving tight on the purchase the mast is brought forward sufficient to enable the wedges on the after side, which keep the mast in its place, to be taken away—then lower by slacking away on the purchase, and the masthead falls aft, and as the support in the deck at the afterside is taken away, the mast slides down until it rests on the crotch. The mast is secured in the deck by two fore and aft beams extending from the beam forward of the mast to the forward beam of the main hatch. When raising or lowering the mast these fore and aft beams prevent the mast from swaying. When the mast is hoisted in its place there are chokes or wedges (already mentioned) fitted across the fore and aft beams to prevent it from moving aft. The aft or mizzen sail is also a lug sail, rigged the same as mainsail, only that the tackle is made fast to the mast, which does not necessitate the lowering of the sail when tacking. It is quite small, the mizzen-mast being stepped abaft the hatch, and the sail sheeted to an outrigger which works on the same system as the jib-boom. The mast is always lowered at sea after the nets have been "shot" at night, and hoisted after the nets have been hauled in in the morning. This is done to prevent rolling and unnecessary drifting from the force of the wind on the mast.

THE RUDDER.

The rudder is unshipped when fishing and in harbor. The stern post being upright, as a rule, renders the unshipping and shipping of the rudder an easy task. The rudder is fastened by three strong iron braces and pintals with corresponding braces on stern post. The lower end of the rudder is about 18 inches wide, gradually tapering to the head, which is about 12 inches wide. The tiller is about 8 feet long, and morticed so as to go over rudder head. Each boat carries from 5 to 7 men and from 40 to 50 nets.

NETS AND MESHES.

Before proceeding to describe the herring net and mesh generally in use in Scotland at the present time, it may be well to transcribe what the commision appointed by the British Government, in 1878, to report on the herring industry in

Scotland, has to say about nets and meshes. From this it will be seen that the question of the mesh and its size has been very thoroughly discussed in Scotland. Our own opinion, frequently expressed to fishermen and others in Britain, is, that the present mesh in use in Scotland is too small, and calculated to take immature herring of small size and to allow the larger herring to escape. Wherever we saw newly caught herring we were surprised at the small size of the fish, showing either that the large herring had been fished out years ago, leaving only small young fish to be taken now, or else that the small mesh fails to secure or gill the larger fish. Old people in the north of Scotland know that the herring taken now are not, in size equal to the herring of fifty years ago, and for this there must be some cause. The Scotch fishermen, however, entertain very decided opinions upon the subject, and universally express their preference for the small mesh of 2 inches, which is the smallest mesh for herring allowed by law—when the net is new—but which, as a matter of fact, diminishes in size from the action of the water by swelling the twine, especially the cotton twine, when the nets are put in use.

On this head the British Commissioners in 1878 say:

"Some of the reasons which prevent us from recommending a close season equally deter us from adopting another recommendation which was constantly made to us, namely, that the mesh of the herring nets should be regulated.

"It was over and over again contended by the witnesses who appeared before us that the present mesh of herring nets was too small, and that it would be wiser to have the old mesh of inch from knot to knot. The history of the old mesh is curious. So long ago as 1868 an Act was passed making it illegal to take herrings in any part of Great Britain with any net having a mesh less than inch from knot to knot. This Act still applies to Scotland, but it is practically incapable of enforcement, because it only applies to the territorial seas, and the greatest part of the herrings are not caught in those seas. In the Convention which was concluded with the French Government in 1843, and which was confirmed by the British Act of the same year, the same provision was introduced (Article 28). And while the provision was in force it was undoubtedly illegal for any fisherman to use a net for herrings with less than an inch mesh. The Convention Act was, however, repealed by the Sea Fisheries Act of 1868, and since then no law of mesh has been enforced on the Scotch herring fishermen.

"There is then a precedent for the law of mesh. The first objection to it is that such a law can only be enforced by a fresh Convention, and that it must therefore depend on the views of foreign Governments. Apart, however, from this objection, there are grave reasons for thinking that any interference with the mesh would be inexpedient. The law of mesh was passed to prevent the capture of immature fish. The immature fish will not readily take the salt, and are therefore useless to the fish curer. But the immature fish, it may be observed, command a fair price in the fresh fish markets, and furnish a considerable supply of wholesome food, especially to the poor. Unless it could be shown that the capture of immature fish was diminishing the capture of mature fish, we think that the Legislature should refrain from interference.

"It is indeed true that many fishermen are of opinion (1878) that a larger mesh would actually prove more profitable than the smaller mesh which is now in use. The larger herring are imperfectly meshed in the smaller mesh, and drop out of the nets and are lost. We are inclined to believe that the fishermen are, in many cases, using too small a mesh. Some of the most intelligent among them are of this opinion, and are ordering meshes of a larger size, even down to 33 to the yard; but it would evidently not be wise in the interests of the fishermen to interfere with the fishermen on this ground. It might under certain circumstances be necessary to provide a certain mesh to save immature fish. That course has long been adopted in the case of salmon, but it could hardly be justifiable to institute a larger mesh for the sake of increasing the immediate profits of the fishermen. The fishermen themselves must, in the long run, be the best judges of the mesh which it pays them to

use; and (excepting for the protection of the fisheries) there can be no reason for interfering by legislation.

"There is another reason against any interference with the mesh. A cotton net, when it leaves the factory, has a larger mesh than after it is barked. The mesh shrinks with every fresh barking. The stouter cotton shrinks more than the finer cotton, and inferior thread shrinks more than the better thread. A net weighing 20 lbs., with 32 meshes to the yard; a net weighing 16 lbs., with 33 meshes to the yard; a net weighing 14 lbs., with 34 meshes to the yard; and a net weighing 13 lbs., with 35 meshes to the yard, would all shrink to about the same size, or to about 36 meshes to the yard. A fisherman ignorant of this fact, ordering a net with a little stronger thread, or employing a manufacturer who supplied him with an inferior article, might unwittingly be led to an infraction of the law.

"This circumstance has so much force that many of the witnesses who have recommended the regulation of the mesh are in favor of enforcing the law in the manufactories. The manufacturers, as a rule, would not object to this arrangement, because it would give less trouble, and then pay them better to make a net with a wider than a narrower mesh. We should imagine, however, that Her Majesty's Government would hesitate to institute machinery for examining all nets made in every factory."

The nets now (1889) in use in Britain are made of cotton with 2, and in some cases 2¼-inch mesh, 360 meshes deep and 20 fathoms long unmounted. A single head rope of about 2¼-inch manilla, made expressly for the purpose, and which will not kink, the norsels are very large, and when fastened will leave a space of about 5 inches between the net and the head rope. There is a round piece of cork-wood on every second norsel, which is put on before the norsel is made fast to the head rope, the norsel being put through a hole in the cork wood. This cork-wood keeps up, or floats the head rope toward the surface of the water, while the lower part of the net is kept down by stone sinkers placed at intervals of 5 to a net.

Before leaving harbor the nets are carefully laid in the hatch, the head rope being placed aftermosts the stone sinkers placed, one directly on top of the other at the forward end of the hatch, the twine or body of the nets being in the middle, sheepskin or dogskin buoys being made fast, with 3 fathoms of scope line, at the ends, or fastening, of each net to the other, along the whole drift, or number of nets carried by the boat. Having the nets so carefully laid enables the crew when they arrive at the fishing ground, to "shoot" or set them as fast as the boat can sail. When the nets are all in the water they are 3 fathoms from the surface. This secures them from all danger from passing vessels, while the sheepskin buoys and the corks prevent them from sinking, 3 fathoms being the distance the buoy is from the net.

The usual end-mounting is used along the end of the nets, and a small line run along the foot, while the head, which requires to be very strong, owing to the depth of them, is mounted with a line about the size of an 18 thread hemp cod line, the norsels being made fast to this line, and on the net side of the line, or between the real net and the line, first one mesh deep of large twine doubled, and five meshes deep of large twine single. When the nets are set for fishing the nearest one to the boat would be about 100 feet distant from the boat, for which purpose a large hawser is used, one end made fast to the end of the head rope of the nearest net to the other to a timber head in the stern of the boat, which they have in the boat for this purpose.

The time for "shooting" or setting the nets is at sunset. The regulations of the Scottish Fishery Board render this imperative; but, as too often happens in the case of the most salutary regulations, violations do occur. The commission appointed by the British Government in 1878, already referred to in their report on this subject, says:

"It is also desirable to prohibit the shooting of any movable or drift nets between sunrise and sunset, as no doubt shooting in daylight scares the fish, and in this way causing the shoal of herring to sink the act of one or two improvident

crews or persons, may cause great loss to all the rest. The herring is a timid fish, and is easily scared by noise or any circumstances; and, however little effect the enormous mass of netting may have on the general stock of herrings, we think it feasible to conclude that the fish may be scared by these means from the immediate fishing ground, and deterred or interrupted from entering the lochs and firths of Scotland, and may possibly have the effect of scaring the fish from entering those narrow waters."

In this connection a very curious circumstance happened in one of the lochs on the west coast of Scotland some years ago. Certain fishermen disregarding the rule for setting nets, shot their nets in the loch in the day time, and were rewarded by a good catch of fish for several days. Great surprise was expressed at the fact of so many herring being gilled in broad day light, until it was discovered that the fish were all blind, a film having formed on the eyes of all the herring, and this it was supposed happened from the fact of the fish having been enclosed in the loch for some time in water comparatively shallow, and exposed to the rays of the sun.

It is customary for the night watch on the boat to try the nets during the night to ascertain what fish has been gilled. This is done by hauling in the hawser made fast to the drift and the whole or part of the first net, but in any event the nets are hauled in at day break and the herrings shaken out or not as may be found most convenient. The nets are taken in by a machine which Scotch fishermen call an iron man. This machine is made of iron, having three sheaves on one side through which the head rope of the net goes, the twine or body of the net going along between the machine and the rail. This machine is worked by a crank which one man turns, while one holds the turn of the head rope, and the others of the crew gather the twine or body of the net and the fish in. Very often the boats go off long distances to fish, 10, 12, 30, 40 and more miles. Under such circumstances the crews are naturally anxious to return to port, and therefore, as a rule, they do not and cannot take time to shake out the fish as the nets are hauled in; so that nets and fish have to remain in one mass until the boats reach harbor.

This is to be regretted, as there can be no doubt that the superincumbent weight of nets and fish, especially in hot weather and on calm days, must affect the quality of the fish more or less injurously—whereas, could the fish be at once shaken out of the nets at sea, and salt at once applied, as is done by the Yarmouth smacks and the Dutch, all deterioration would be avoided and the fish delivered in perfect condition.

When the fish are not shaken out of the nets at sea of course the salt cannot be applied, and it often happens that boats do not reach harbor until late in the afternoon or evening

ARRIVAL IN HARBOR.

In former times herring were contracted for, beforehand, by the fish curers, at so much a cran, which was a measure containing a sufficient quantity of green herring to make a barrel of gutted and packed herring, at the final filling up of the barrel. Now, however, in Scotland as in Yarmouth and elsewhere in England, all herring are sold by auction to the lighest bidder—the auctioneer being responsible to the fishermen for the purchase money, less commission, which is generally about 3 per cent.—the auctioneer settling with the fishermen every Saturday.

Immediately on their arrival in the harbor the fishermen take a sample of their catch in a basket to the auctioneer, who at once calls a sale, at which the fish curers attend, when the fish is sold, as already stated, to the highest bidder. When the fish are sold the purchaser sends carts alongside the boats, and the fish are measured into the carts, 4 statute baskets to the cran. The cran contains a barrel and a-half of herrings. The fish are then emptied from the carts into large square shallow vats and sprinkled with salt, where they remain until a number of deliveries are made, and the herring-gutting girls commence work.

THE HERRING GUTTING GIRL.

The herring-gutting girl is an institution in Scotland.—An important factor in the great herring fishing industry of that country. Without her, the gutting, curing

MAKING HOME — DAWN

and packing of herring could not go on as it does at present. These girls come in hundreds from the Highland districts. While many of them belong to families of the poorer class, many of them belong to families who are better off, but who find it convenient to earn something in this way, annually, for the benefit of the family. These girls are a robust, able-bodied, respectable, modest, well-behaved class. They perform their work cheerfully, honestly and efficiently. They require no scolding, they indulge in no levity of manner nor trifling, and often in the afternoon, when most other women would be used up over the hard work, some one of them will start up a lively Highland song to help the time and the work along. When off duty and dressed up, they would never be taken for herring girls. They work in crews, each crew consisting of three girls. The work of gutting and packing is done with amazing rapidly and dexterity. An expert and experienced crew of three girls can gut and pack 80 barrels of herrings in one day. And be it remembered that the Scotch herring barrel contains 250 to 275 lbs of herrings, while our Canadian barrel contains only 200 lbs. of fish, so that 80 Scotch barrels would be equal at the very least to 100 barrels of Canadian herrings. We saw a Wick girl who had packed 80 barrels in one day. When at work, one girl, the head of the crew, packs, the other two gut or gibb the herrings. The head girl of each crew has a number. This number is written in blue or red chalk or pencil, by the cooper, on the bottom of every barrel filled by the crew: so that in the event of improper or defective curing and packing appearing at the time of inspection, the same by means of the number can be traced to the crew whose work it is, and all the fish packed by that crew in the lot undergoing inspection can be laid aside for examination instead of having to examine the whole lot, comprising the work of a number of crews. In this way the work of inspection is not retarded, as would be the case if the evil could not be localized, but is really facilitated. These girls are paid so much per barrel, generally 6 pence to 8 pence sterling, about 14 to 16 cents of our money, at which rates they can make good wages, when fish is abundant.

In the British report already referred to, the late Mr. Frank Buckland says:—

"Herrings are classed into what are called 'Matties,' a word of Dutch origin, believed to signify 'Maidens.' They are immature fish, with the milt and roe undeveloped. They are principally sold in the Russian market, where they are regarded as a great delicacy, and the great Russian families are in the habit of obtaining for their own use, an early barrel of Scotch 'Matties.'

"The other designations are 'Fulls' and 'Crown Fulls,' terms used when the fish are partly full and full of milt and roe. And the term 'Spent' or 'Shotten' is used to designate herring immediately after they have spawned. These latter fish being of an inferior quality receive an inferior brand, and are branded as 'Spent.' They fetch a lower price, but are readily sold in the great continental markets."

This classification still prevails, and nearly all the newly caught herring we saw consisted of those four kinds of herring, not separately, but mixed up in almost every single catch.

It is the business of the gutting girl to separate the different classes of herring and this she does, as she proceeds with her work of gutting without interfering with the usual rapidity of the gutting operation. And so perfectly is the separation effected, that a fishery officer informed us that it rarely happened that a wrong herring is ever found in any barrel on inspection. In front of the herring girl, in the great shallow vat containing the green herring, are placed three baskets, or four, into which she assorts the herring as she guts them. Not only are great care and skill exercised in so perfectly separating the different classes of herring, but equal care is taken to exclude all poor, sickly immature fish—every unsound and bruised fish. The herring girls, the coopers, the fish curers themselves and the inspectors, all see to this. And this is most important, as experience has shownthem that one unsound or damaged fish may taint a whole barrel, and one bad barrel may damage the character of a whole shipment. In Scotland, according to the Scotch mode, the gutting girls do not rip the fish at all, but the herring are gutted with a short, sharp, three-cornered knife, deftly inserted at the upper part of the gills

which takes away the fore fins, the gills, the stomach and the crown gut, all that will follow with one cut. The herrings which have previously been sprinkled are then roosed with salt and taken and packed in the barrels. The packer sprinkles a quantity of salt on the bottom of the barrel, then a tier or layer of herring packed slantingly on their back, as a general rule, with alternate sprinklings of salt and herring until the barrel is full, in the proportion of a half bushel of salt to the barrel, the whole quantity of salt, including the first sprinkling and roosing being about one bushel to the Scotch barrel, which is larger than the Canadian barrel. The kind of salt called "Rincom" is that much used and preferred in Scotland—the "Tripani" being preferred in America.

When the herring are intended for the Irish market they are packed flat on their sides, and when intended for the German market they are packed straight on their backs, belly upwards, which, by pressing out the sides of the fish laterally, certainly improves the appearance of the fish and gives it a better and plumper appearance than they had before. The fish, as with us, are laid in the barrels with the heads towards the staves, and the tails to the centre—the layers being laid across, alternately.

When the barrel is filled up it is, after settling some, headed up and left standing on end for 3 or 4 days to allow time for the settling, shrinking, or "pining" of the fish. It is then unheaded, when the herring, which have settled 6 or 8 inches, or more, are found floating in pickle. This pickle is drawn off, and preserved in buckets, from the small bung hole in the side of the barrel, about 15 or 16 inches from the bottom, when the herring will settle still more in the barrel. A sufficient quantity of herring of the same day's catch is then taken from other barrels and carefully packed in to fill up. A small quantity of salt is laid on top of the last tier or layer of herrings. The cooper then takes the "dunt," which is a stout, round piece of wood, made to fit the inside of the mouth of the barrel, on top of the herring which have been repacked in to come above the top of the staves; he then, by standing or jumping on the "dunt," presses down the herring so as to insert the head, heads up the barrel, which is laid down on its side, bung-hole up, when the brine, previously drawn off, and which has been preserved, is replaced, the bung driven in, and the barrel allowed to remain on its side ten clear days, so as to allow the fish to mature, or season, before it can be inspected. For transportation, the tighter the herring are in the barrel the better they will keep. By the British Act of 24th, July 1851, 14 and 15 Vict. Chap. 26, the law which required herrings to lie in the barrel fifteen days after being refilled, and before inspection, was repealed, and the Fishery Commissioners were empowered to fix any other period and they accordingly reduced the time to ten days. This change was made principally to enable curers to make shipments, and realize on consignments or bills of lading five days earlier.

Results in the continental markets, as hereafter referred to, and as developed in this year (1889), seem to indicate unmistakably, together with other conducing causes, that the change was injudicious, and that the character of Scotch herring has been lowered at Stettin and elsewhere by placing in these markets, herrings immaturely cured and unseasoned. Each curer has his own private mark and name, as well as the Government brand; also the name of the inspecting officer and date of inspection, stamped on the barrels with hot iron brands. There is a small blow-hole in the top end of the barrel, by which the cooper, by blowing into it, can test the tightness of the barrel, and if found not air tight, he remedies the defect by the insertion of flags in the leaky joints.

There appears to be no compulsory rule as to the exact quantity of salt to be used. The fishery officer satisfies himself that sufficient salt has been applied for the preservation of the fish before he attaches the brand. For certain markets and for transportation a few more pounds of salt are used. One authority says that the British herring barrel should contain, when for home sumption, 235 lbs. of herrings, and when for the continental markets, 224 lbs. As already stated, the herring required to refill the barrels must be of the same day's catch, and if any of these look dirty or oily they are washed in salt water, but no

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GUTTING HERRING

water touches the rest of the fish, as it is universally held by all parties that washing before packing is most injurious to the substance of the herring, rendering it hard and brittle, and that by the use of water all the delicate, delicious flavor of the herring is washed away. There can be no doubt of this, as any one can prove who will fairly test the great difference between a fresh-broiled herring that has not touched water and a herring that has been well washed in water before cooking.

In the European markets the natural flavor of the herring counts for much, therefore, every effort is made by all the herring fishing nations, to retain that flavor.

So particular are the Dutch in this respect that in gutting the herring they use a knife differing in shape from that used in Scotland, having a larger handle and sharper pointed blade, which they insert into the neck between the gills and the bone, and then by turning the knife, they bring away the gills and stomach, leaving the crown gut or *appendices cæci*, which they consider materially improves the flavour of the herring. As a matter of course the gutting, after this mode, is done more slowly, and the packing more carefully; therefor we may infer that both are better done. Any degree of superiority which Dutch-cured herring are said to possess over the Scotch-cured article is not due so much to any substantial difference in the respective modes of curing as to the greater care and pains taken in the different departments of the entire process of curing and packing, and negligent carelessness on the part of some of the Scotch curers. Sometimes the Dutch adopt a fanciful mode of packing the herring in the barrels, placing the head of one to the tail of the other, instead of tail to tail, the common mode, but laying the subsequent tier across the previous one. At other times they pack the herring in circular form around the inside of the barrel, commencing at the outside of the circle, next to the staves, and filing up the layers towards the centre. This latter mode of packing may be for the purpose of facilitating the packing of herring into the small kegs, hereinafter referred to, and to give the contents of these kegs such a neat and artistic appearance as could not be secured in the case of the ordinary stiff, straight herring, packed in the usual way.

The Dutch are particular in skimming off any oil or greasy substance that may gather on the top of the pickle in the barrels, as the oil is held to injure, by rust or otherwise, herrings kept for any length of time. Mr. Mitchell, in his book on the herring, says:—

"Having carefully observed the system of curing practised by the Dutch, both on our own coasts and elsewhere, it may be stated that the curing of herring, as *soon as caught, with superior salt in oak barrels*, may be the cause of the Dutch herring having obtained such a high character."

THE BARREL.

The Scotch herring barrel is a substantial, well-made package. It is made principally of hardwood,—oak, birch, white ash, maple, and the harder species of larch and spruce. The staves come chiefly from Norway. Oak is the best, and is nearly the only kind used by the Dutch. Hardwood is preferable, being stronger, and also because it does not sour the pickle, as softwood does. In consequence of the scarcity of stave wood, the regulations have been relaxed, and spruce and larch are now allowed to be used, but the staves must be heavier. The hardwood stave is $\frac{5}{8}$ of an inch thick in the barrel, head and bottom about $\frac{7}{8}$ of an inch thick when cleaned. The bottom end of the barrel is full hooped, whereas the top end is only quarter and end hooped—three quarter hoops and four end hoops—on the bottom end eleven or twelve hoops. In many instances now one iron hoop, 2 inches wide, and $\frac{1}{12}$ to $\frac{1}{16}$ of an inch thick, takes the place of the four end hoops. This iron hoop on the top end is an improvement suggested by one of the fishery officers in Scotland, and has been very generally adopted. It greatly protects the chine of the barrel *in transitu*. It greatly facilitates the unheading and heading of the barrels. One of the oldest and most reliable fish-curers in Scotland told us that a cooper can unhead and head three or four barrels with the iron hoop in the same space of time as would

be required to do one barrel with the wooden hoops, and that by the use of the iron hoop the staves can be drawn tighter together than with the wooden staves, because it can be drawn tighter without breaking. This gentleman, one of the largest fish-curers in Scotland, has adopted the iron hoop, together with many others. In some places where it was adopted its use has, in some cases, been abandoned, and in some places opinions differ as to its value. We think the objections made to its use arise more from a sort of prejudice against all innovations than from any well founded reason. We heard of only two objections to the use of the iron hoop: one was, that the roughness of the outer edge of the iron hoop, caused by the iron driver used by the coopers, hurt the hands of those engaged in handling the barrels; the other was, that if the iron-hooped barrels full of herring were kept over for two or more years, the action of the salt on the iron hoop would corrode, not only the hoop, but the wood of the chine under the hoop, so rendering it weak and liable to break in the course of transportation. The use of a stout glove or mitten would meet the first objection, and the fact that the iron hoop is iron painted to prevent rust, and that it very seldom happens that herrings are kept over for two years, disposes of the second objection. So careful has the Fishery Board of Scotland been in regard to the handling of herring barrels that the use of can hooks was prohibited; but this rule must be relaxed now, for we saw great quantities of herring barrels lowered into the holds of vessels by the use of can hooks. The Scotch herring barrel must contain not less than 27 Imperial gallons. Half barrels are permitted, if made of the legal size. Under the permission granted as to the use of certain soft woods for herring barrels, the fishery officers in some places found that they had to deal with a new offence. They found, with reference to the soft wood barrels, that staves and headings were made so thick as to interfere with the capacity of the barrel, and so reduce the quantity of fish which the barrels should contain. Seizures were made and barrels confiscated, because of these attempts to impose upon the purchaser. The matter was discussed in the press and brought up in Parliament in August last (1889), when the Government promised to bring in a Bill next Session regulating the herring barrel, and establishing a fixed standard for the same. Hitherto, this has not been done, the regulations referring only to the minimum size. The maximum size had not been fixed. While the law, according to Mr. Mitchell, has been that a barrel of herring for home consumption should not be less than 235 pounds, exclusive of salt, and for export to the European markets not less than 224 pounds, as a matter of fact some barrels contain 260 to 275 pounds of fish and salt. The weight of a barrel of herrings will vary, if properly packed, because one class of herrings differs from another class. This was tested while we were in Scotland, the "Crown Full" proving the heaviest, and the "Spents" the lightest, "Matties" and "Fulls" being intermediate. The difference in weight ran from 15 to 25 or 30 pounds per barrel.

In his reply to questions sent out in 1869, already referred to, Mr. Gordon, of Pictou, a practical and intelligent Scotch herring cooper, at one time says:—"That herring barrels should be made of white ash, elm, maple, yellow birch, clear of sap and heart, and that hacmatac or the Norway larch is used by Scotch curers." He prefers oak where it can be had, and holds that hardwood staves retain the pickle without "souring" it. Mr. Mitchell, of Scotland, in his book, in one of his suggestions for the improvement of the herring fishing, says:—"Encouragement should be given to the fish curers to cure the herring in oaken barrels; the Dutch do not generally use any other. We are of opinion that oak is not only, for its strength and retentive qualities, the best suited for the purpose, but that there is also a preservative quality in this wood, and that it moreover imparts a pleasant flavor to the herring."

THE CANADIAN HERRING BARRELS.

In order to have the opinion of competent experts in Scotland, as to the sufficiency of our Canadian herring barrels, we took with us a new barrel from Halifax—a barrel of average make—neither the very best nor the very worst. The barrel

was exhibited publicly in the principal business street of the town of Wick, and the "Monthly Herring Circular," published at the office of *The Northern Ensign* newspaper of August 31, 1889, gives its opinion of the barrel as follows:—

"We have seen the sample herring barrel brought over to this country by the Canadian delegates who are here enquiring into the different modes of curing herring. If this barrel is a fair specimen of barrel manufacturing in the Dominion of Canada, there is certainly room for improvement. It is a rougher article of the kind than Scotch coopers put through their hands, and it is also less substantial than the average Scotch herring barrels. The Canadian gentlemen would do well to take back with them a sample of the work done at one of the Wick cooperages, and the coopers in Canada will then be able to compare notes, and see wherein they fall short of their brother handicraftsmen in the Old Country."

Since the above was written the Canadian barrel has been examined by experienced fish curers and coopers. While admitting that the workmanship of the barrel is passably fair, with the exception of the hoops, the hoop knots of which are too short, and therefore apt to spring asunder, and while they consider the barrel sufficient to contain herrings on the spot where packed, they all consider it too light and too weak for purposes of transportation, especially by railways or other modes of conveyance where all kinds of freight are very roughly handled. They consider the staves altogether too thin, and the hoops too few, there being only 4 hoops at each end and 3 hoops on each quarter, 14 hoops in all; while on the Scotch or British barrel there are 11 hoops on the bottom end, 4 on the upper quarter and 4 on the upper end, being 23 hoops in all; or where the iron hoop is adopted, the iron hoop standing for the upper 4, 19 hoops in all.

HERRINGS IN SMALL PACKAGES.

The Germans and Dutch—the Dutch especially—have for some years been doing quite a large and lucrative business in herrings re-packed from the large barrels, put up in packages of small size, which are sold under the name of Dutch herring. Considerable quantities of these are consumed on the continent of Europe, and large quantities are exported to the United States, where they command a ready sale and good prices. The herring chiefly used for this business are the best brands of the Scotch-cured herring, the "Crown Fulls" and "Fulls." Stettin imports principally from the north and east coast of Scotland—the west coast herring nearly all go to Hamburgh and Holland. The Germans re-pack chiefly into half barrels and quarter barrels, there being a great demand in Germany for packages of that size for family use. The packages used for this purpose are of substantial make, having nothing of a fancy appearance. The Dutch re-pack into neat, fancy looking packages, chiefly of one-eighth and one-sixteenth of a barrel. The Germans re-pack the fish as they come out of the barrels; the Dutch separate the fish—the male or milt fish from the female or roe fish—putting the roe fish into one keg and the milt fish into another. The milt fish retails at 25 cents more than the roe fish, and the white hooped keg retails at 25 cents more than the dark hooped keg. In re-packing, the original brine from the original barrel is used for the small kegs, and should there be a deficiency it is made up with new brine; but the new brine should be used as sparingly as possible, as it hardens the fish and takes away much of the natural flavor of the herring. The dark hoops are hoops with the bark on; the white hoops are hoops made of the white or yellow cultivated willow, which is extensively cultivated in Europe for basket-making, fancy hoops, &c., with the bark peeled off. The smaller kegs are principally machine-made, and are sold very cheap.

Successful attempts have been made in England and Scotland to put up herrings in this way for the American market, but it was found that the Duch had secured such a footing in that market that some effort would be necessary to push the British article. The business was not pushed and it died out. This season (1889) a leading fish curer in Wick has decided to engage in this branch of the herring business, and for this purpose imported many thousand small kegs, one-eighths and one sixteenths, from Holland. He had them brought over by a ship in ballast, at a

low rate of freight, on condition that he would give the ship a return load of Scotch herring.

The total quantity of herring imported into Germany annually is about 400,000 barrels. Of this quantity about 200,000 barrels are imported into Stettin, and the export of herring from Germany to the United States is about 40,000 barrels. The exact imports of herring into Holland we could not exactly ascertain but, as already stated, the Dutch import considerable quantities from Scotland, and catch large quantities of herring themselves. They export largely to the United States, principally, we understand, in small packages, and probably about as much as Germany, or more. These small Dutch kegs of herrings—white and dark hoop, separated milt or roe fish—are now imported from New York into Canada, at Montreal, Que., and Berlin, Ont., and are much in demand wherever anything is known of them. In the latter town they are much sought after by the well-to-do Germans of Waterloo County. There is no mystery in this branch of the herring business.

Knowledge which comes by observation and experience, together with experience, and common sense and good judgment, are required. In order to establish and to maintain a good character for the fish thus put up, special care and attention must be given that the fish taken to fill up these kegs with is of the best quality—that the re-packing is carefully and properly done—that the fish has been properly seasoned and "pined," and that in re-packing the fish should be as little exposed to the atmosphere as possible—that is, as soon as a barrel of herring has been opened it should be re-packed into the kegs with all possible expedition—so as to avoid any action by the atmosphere on the contents while exposed. The herring taken to fill these small kegs should be at least several weeks old, and also it should be seen that no inferior or bruised herring should be used.

We were informed in Stettin that there is a great demand in Germany for herrings put up in half barrels and quarter barrels, for family use, and that the the sale of herring in that country is very materially increased by having much of the Scotch herring put up in that way. We ascertained that, in reference to these small packages, much diversity of opinion exists among dealers in various countries and localities as to the most convenient and most desirable sizes. Some localities preferring one size, some another. It is considered prudent by those who think of entering into the business to find out, by enquiry, the sizes preferred in different places or by different dealers, and as nearly as possible to meet their wishes. In Britain the arrangements by the dealers from the largest wholesale dealer to the smallest huckster, are very complete, and the distribution is made expeditiously and perfectly. Each retailer has his regular customers, can tell to a nicety how much fish he requires, which is dealt out to him promptly by the middlemen, who purchase from the large dealers. In this way the public are promptly supplied, and very little fish is ever lost.

BLOATERS.

Although we arrived in Yarmouth out of the fishing season, and had not therefore an opportunity there of personally observing the various processes of manufacturing bloaters, yet from several reliable sources we procurred all necessary information on the subject, and afterwards in Scotland we had the opportunity of seeing the process, as carried out in the curing house of one of the largest curing firms in Britain. Yarmouth is the great centre of the bloater manufacture in Britain, not only as to quantity but also as to quality. Although excellent bloaters are put up in many other localities, the Yarmouth bloaters seem to be the favorite bloaters in the London market. We saw large quantities of bloaters in Billingsgate market, London, manufactured in Lowestoft, Shields and other towns in England. In fact the bloater branch of the great herring industry is a very extensive business. The number of bloater manufacturers in Yarmouth alone is very great, and all find a ready market for their goods, although a few are said to excel, and for whose bloaters there is always an active demand by the first fish dealers of London.

Yarmouth possesses one great advantage over many other localities in the bloater line, because the quality of the herring taken by the fishermen of that place in October and November is exactly adapted for the manufacture of bloaters, and no doubt the season of the year, the weather being then cold, is also favorable to this branch of the business.

One of the best bloater curers in Yarmouth informed us that one reason why his fish stood so high in the market was, that he was always very careful, in the first place, to select the very best fish for the manufacture of bloaters, reserving for other purpose all inferior and unsuitable fish. Then he is very careful in salting, curing and smoking them. We saw in the fish stores in Yarmouth, also on Billingsgate market in London, and on the tables in the hotels, a bloater very slightly salted, and smoked so slightly that there was no discoloration at all of the herring. This bloater so prepared is a most delicious fish. It is prepared in this way for immediate use in the nearest cities, towns and country places, and will only keep some three or four days. Other classes of bloaters, intended for consumption at greater distances, and therefore designed to keep longer, are more highly salted, smoked in various grades. The bloaters we saw were fairly fat, but very fat herring will not do for bloaters. Bloaters are salted in heaps on the stone floors of the warehouses—some for a few hours, some for one or two days or more. They are never so highly smoked as the mildest red herring. There is no difficulty in manufacturing bloaters. All that is required is intelligence, good judgment, quick observation, and honesty of purpose, together with a knowledge of the tastes of the consumers; and also whether the fish is required for immediate use near by or for exportation to places at a distance. The gentleman who gave us so much information said that first of all he required to know exactly the kind of bloater required, and that he then did his best to supply the article. When the herring have been quite sufficiently salted they are then washed clean on the outside, but are not opened, gibbed or gutted. They are then strung on rods and hung up to drip and dry, and then smoked. The fuel preferred in Britain for smoking purposes is the sawdust, or the waste from the turning lathe of birch, although oak and elm are sometimes used. All agreed that the birch made the sweetest smoke. The white bloaters put up for immediate use are packed in neat, light boxes containing 50 herrings each. Those more highly salted and smoked, are put up in larger packages. The bloaters we saw were considerably smaller than our own herring; they are deep from back to belly, and are an excellent fish. Too much attention cannot be given to the selection of the herring used for bloaters and to the respective curing processes. The excellence of any particular curer's bloaters does not arise from any special mode of curing, but from special care and attention, together with that practical knowledge which close observation and experience alone can confer. At the hotel the bloaters were opened and split from the belly to the back bone, the gills, gut and stomach taken out, and the herring, without being washed, cooked with the milt and the roe. The roe furnishes pleasant eating.

In the case of bloaters for immediate use, the herring may be put immediately after being landed and selected, into a strong pickle from six to eight hours. They are then put on the spits, and washed by dipping in large tubs of salt water or very weak brine, and then hung up in the smoke house. The fires should have been burning previously, therefore emitting only a slight smoke. A few hours—six to ten—in the smoke room will suffice. They should be cooled off before being packed for the market.

The bloater business in Britain is simply enormous, and uses up an immense amount of herrings, thus greatly benefitting the fishermen and the curers, who realize at once on this branch of the herring industry, while the public are supplied with herring in an agreeable and popular form.

RED HERRINGS.

There is not so much activity in this branch of the herring industry, either in Britain or Canada, as formerly. The cause of this is said to be want of inspection and great negligence and want of care in curing and packing the fish. We were

informed that the shipment from Canada to Britain of inferior smoked herrings did great injury to this trade.

Mr. Mitchell, in his book, treating of the trade in red herrings in Britain, says :—

"The trade in red herrings was formerly much more considerable that it now (1864) is; at almost all the principal fishing stations large buildings were erected for the purpose ; but excepting at Yarmouth, the trade has diminished considerably. This may be attributed to there being no legislative enactments applied to the curing and preparation of red herrings, in the same manner as applied to the curing of British white herrings. The consequence has been that the purchaser can have no confidence in the quality of the herrings nor in the size of the barrels, and therefore merchants at home and abroad do not purchase cargoes as merchandise; and the curers, as is the practice at Yarmouth, must export the red herrings not used in this country to forign countries for sale on their own account.

"In explanation of the preceding remarks, we have to quote an extract of a letter from a house which ventured to purchase a cargo of herrings, to prove that neither respectable names, nor even a judicious selecter, can guarantee the merchant who buys, that the article intended to be bought has been purchased :—

"'We think it fair to admit that we are thoroughly persuaded, although we are strong advocates for free trade when it can be properly carried out, that the curing and preparing of herrings is of such a complicated nature that without the superintendence and care of the fishery officer, mercantile transactions could not be carried on safely to any considerable extent, and we shall give you an exact account of our dear-bought experience to prove this.

"'We sent one of our fast sailing coppered schooners to one of the principal places for red herrings to load a cargo purchased by us. One of ourselves went and examined the different kinds of red herrings for sale in the hands of the most respectable curers. He saw many casks opened, and thought he had bought the quality necessary; but to make assurance doubly sure, we engaged two of the leadings agents at two neighboring ports to examine the parcels purchased, at shipment, so that error or fraud might be prevented.

"'The captain, a most intelligent man, was also acquainted with the qualities of red herrings, and to him we confided the shipment for sale. He went to sell his herrings, and when he began to deliver them to the buyers it was found that the barrels generally contained a better kind on the top ; that refuse qualities were in the middle ; and, although we bought the whole cargo as well-packed barrels of 'Full' herrings, the barrels when emptied out by the buyers were found to be very inferior, to our serious loss, namely, part of the herrings were not properly cured, and part of them were 'Shotten' or 'Spent' herrings. From that time we resolved neither to buy red herrings for ourselves nor to take the responsibility to buy them for our correspondents abroad, and we do not know any one who would do so who knows the trade. We attribute the inferiority of the quality partly to the reckless conduct of the servants of these curers, who really sold a fraudulent article; and until the fishery laws are extended to the curing of red herrings we do not think this trade will flourish.'

"We think it right," Mr. Mitchell says, "to quote this letter, and to remark, that if such difficulties arise as to making red herrings a staple article, which can be, comparately speaking, easily examined in the barrels, how much more difficult it would be, if our British white herring trade (the barrels with the herring lying in salt and pickle) were left to the frauds, blunders and ignorance of curers. We admit that the name of the honest curer might go far to secure quality in some cases, but there are so many circumstances connected with curing herrings that we do not know any security sufficiently strong in the most honest curer that would guarantee to the buyer that perfection of quality which is obtainable by our fishery laws."

It is quite possible and very probable that the red herring industry has suffered from due regard not having been given to the selection of the fish used for this purpose, and it may be that fish rejected for bloaters may in many cases have been used for red herring. If so, then this has been a great mistake. Sound, rejected herring,

if used at all, should be utilized as pickled herring and sold for what they really are, but all unsound, sickly or bruised fish should be thrown away. In order to retain the red or smoked herring trade, just as much care and pains are necessary as in the case of bloaters. In addition to carelessness in the selection of the fish, the red herring industry has also suffered from careless washing of the fish, and the use of too much salt, heat and smoke. As has been remarked in the case of bloaters, herring should be prepared with a view to meet the different tastes of the consumers in the respective markets to which red herring are exported. Care should also be taken to have the fish properly packed, and properly cooled off before they are packed.

The fish curer who gave us so much information in Yarmouth informed us that he had been recently opening up a trade with some parts of Italy in the red herring line, and that the demand in some places there is for a herring smoked to the color of a sovereign or other coin of gold, whilst in some places they require them to be pretty well browned, and in other places they will have them nearly black. All these matters of detail are important, and will be attended to by the intelligent, enterprising curer and dealer.

Herring intended for smoking may be salted either in heaps on the floor in dry salt, or in vats in pickle, for periods of one, two or three days. They are then put on the spits, round pieces of wood capable of holding about 20 herrings run through the mouth and gills of the fish, they are then washed in large, square boxes or vats, wide enough to admit of the two ends of the spit resting on each side of the vat. They are then hung up to drip and dry for a day in the open air, or in the smoke-house before the fire is applied. Herring for home consumption are smoked from ten to twelve days, and herring for exportation are smoked from fourteen or fifteen to twenty or twenty-one days. The extent of the heat and the amount of the smoke are regulated with a view to the color desired for the fish. It is said that herrings can be given a bright yellow color by the use of oak sawdust, after the fish have been smoked for some time with smoke from other wood.

The statistical return shows a very heavy falling off, in 1888, in the exportation of smoked herring from Canada, as compared with 1887.

KIPPERED HERRING.

There is a very large business done in kippered herring in Britain. Herring put up in this way are in great demand everywhere, and are preferred by many to the bloater. The very best herring are required for the kippering process. The herring of the west coast of Scotland are in great request for this purpose. The fish used for kippers should be had as soon as possible after they are taken out of the water. They are then carefully selected as to size and quality. Where we saw them at work an active girl stood at a bench laying the herring on its side with the back towards her; with two cuts of a sharp knife she split it from mouth to tail, and with a third motion of the knife she scraped out the stomach and gut, and any loose blood inside the fish. She did her work with great rapidity. The herring were then placed carefully into vats of pickle, where, being for immediate use, they remained for 35 minutes, then carefully taken out and placed in baskets to drip. They were then spitted on fine rods, containing from 12 to 20 herrings each, and hung up in the smoke-house and smoked for a few hours—5 or 6—then cooled off and packed up in small boxes and dispatched to London by train before midnight of the day on which the fish were caught. When the fish are intended to be kept longer more salt and more smoke are applied. Where circumstances are favorable kippering may be carried on to advantage either on a larger or smaller scale. Herring put up in this way are most delicious. They cost a trifle more because of the extra labor and the greater care requisite in handling them. The same materials are used for smoking kippers as are used for smoking bloaters, and the same conditions apply, only that kippers, presenting a larger surface to the smoke, as they do, do not require to be so long exposed to the smoke. As in the case of bloaters and red herring, the tastes of the consumers must be ascertained, and the curing as to salt and smoke regulated accordingly. The manufacture of kippers is

greatly on the increase in Britain. It is an important branch of the herring industry, and utilizes a large proportion of the British catch of herrings.

INSPECTION.

From sundry incidental allusions and references in the foregoing pages it will be seen that much importance is attached to the twin subjects of inspection and brands by able men, competent to judge, who have devoted much attention to the whole question of the herring industry, and whose opinions, founded on practical experience, are entitled to favorable consideration.

From what follows it will clearly appear that a very large number of those most conversant with our own herring fisheries, and the great importance of the herring trade of the Dominion, fishermen, fish merchants, fishery inspectors and overseers, master mariners, collectors of Customs and others, were strongly in favor of a system of inspection thorough, impartial and reliable, and that the same should be compulsory.

One of the questions sent out by the Committee of the House of Commons in 1869 was in the words following:—

Question—"Is an inspection of fish necessary, and should it be compulsory or otherwise?"

In his answer to that question, *D. Thompson, M.P., Haldimand, Ont*; says:—
"Inspection is very necessary."

C. E. Anderson, Merchant, Toronto:

"In the western part of the Province, I speak particularly of Toronto, the present mode of inspection is looked upon as of little or no value, and no guarantee of quantity, I cite an instance: About a month ago I had on sale in Toronto, from Quebec, 200 barrels No. 1 herring, worth in Quebec $6 to $7 per barrel. I offered them to the dealers in Toronto at $4 per barrel in Quebec, and would have taken $3½, but could not get a bid, the cause alleged being that they could not depend on the curing or inspection, and that ten chances to one they would have to throw them all into Lake Ontario, as was the case almost every season in Toronto with many dealers. If inspection was compulsory, it would have a most beneficial effect on this most valuable branch of industry, especially in Ontario."

Mr. Dumaresq, Merchant, Gaspé Basin:

"In my opinion it is necessary that all kinds of fish should be inspected, more especially all pickled fish, and that all fish arriving at any market without having been first inspected should be inspected at the expense of the owner. This would remedy the great evil of having so much bad and inferior fish in the Canadian markets, from the Gulf ports, not only bad in quality but short in weight. I have known fish shipped to Quebec that was only fit for manure. Had that fish been inspected before being shipped it would have been rejected; or had it been inspected on arrival in Quebec it would have been confiscated. Compelling the shipper (or owner) to have fish inspected either before shipping or on arrival would be the means of preventing bad and inferior fish being shipped. Only practical men should be employed as inspectors."

P. Enright, Fisherman, and others, Gaspé Bay:

"The inspection of fish of all kinds would be very necessary and beneficial to the fishermen."

Mr. La Parelle, Merchant, Cape Cove, Gaspé:

"The inspection in Quebec should, in my opinion, be rigidly attended to, especially of green and pickled fish, which is put up in such a slovenly manner by many parties on the coast that it must disgust purchasers, reduce consumption and eventually ruin the market."

Mr. Baudin, Grand River, Gaspé, Fisherman:

"Inspection is necessary and should be compulsory. The inspector should continue on the ground and maintain immediate superintendence."

Mr. Stors, Merchant, Gaspé:

"Inspection of pickled fish is necessary, and should be compulsory."

Mr, Price, Fisherman and Farmer, Little Gaspé:

"Inspection necessary and should be compulsory."

Mr. Chiasson, Fisherman, Magdalen Islands:

"Inspection is, perhaps, required, but should not be compulsory."

Mr. Cormier, Trader and Farmer, Amherst:

"Inspection may be necessary without being compulsory. In the latter case it might be liable to abuse. The inspectors might be partial, or trade in fish themselves."

Mr. Grenier, Municipal Councillor, New Port, Gaspe:

"The inspection of fish is absolutely necessary, and should be compulsory. Great advantage would consequently accrue to the fisherman in the sale of his fish."

C. C. Fox, Collector, Gaspe Basin:

"A compulsory inspection of all pickled fish exported is absolutely necessary if the Government wish to develope an important branch of foreign trade, and for the security of consumers the same measure is necessary in the home markets.

"I have seen the pickled fish of the Maritime Provinces, the United States and that prepared at Wick, in Scotland, and I have no hesitation in saying that that put up in the Province of Quebec is the worst of all; badly salted, badly cleaned, badly pickled, badly barrelled and almost invariably short of weight. In the Magdalen Islands, where between 100,000 and 200,000 barrels of herring and a large quantity of mackerel are annually taken, I have seen herring taken from the same seine, by Magdalen Island and Nova Scotian fishermen, and some months later I have seen the same fish sold in Halifax, when that put by the Magdalen Island fishermen brought about 50 per cent. less than the other, solely from the difference in curing. Nova Scotian herring and mackerel are advertised and fetch a higher price in Quebec and Ontario than those cured by the Quebec fishermen, although the mackerel are from the Gulf and the herring from Labrador and New foundland; because for some time there was a compulsory in spection of pickled fish in Nova Scotia, and although the law was repealed several years ago (contrary to the opinion of many good judges), *the people had acquired the habit of making good fish.*

"All pickled fish is prepared by the fishermen themselves; you cannot see what the barrel contains, and the system of large advances in vogue in the fishing districts induces the merchants to take gladly anything he can get to help liquidate his debt, without being particular as to quality.

"The inspection should be compulsory, because fishermen, as a class, have but little ambition or foresight. Self-interest is but a feeble influence with them, and although they know that better fish would command a higher price, ninety-nine out of a hundred would prefer a small profit and little trouble to greater care and a larger return. At the same time, it cannot be too strongly insisted upon that if inspection is to produce a proper effect the salary attached to the office of inspector must be high enough to induce competent men to fill it. Under the Fishery Act of the late Province of Canada all fish taken by licensed vessels was inspected. But how? In the Magdalen Islands the inspector very properly inspected and weighed each barrel. The consequence was that many refused to have their fish inspected by him preferring to take it to Quebec, where, they said, by paying a small fee, the inspector

would open three or four barrels, and then give them a certificate for the whole. I know another inspector in this district whom no merchant would consider competent to cure his fish, and who never saw any but the miserable fish put up on this coast, and I have known him (a sworn inspector) to give certificates of the quantity and quality of fish *that he had never seen* or been within twelve miles of."

J. W. J. Fox, Collector, Magdalen Islands:

"I do not think an inspection of fish necessary at the places where the fish are caught, unless they are to be exported to a foreign market; but an inspection of fish is very necessary and should be compulsory in the ports of the Dominion on importations for consumption or foreign market."

Mr. Riverin, Fisherman, Malbaie:

"Inspection of fish is necessary, but if compulsory would sometimes be productive of injury."

Mr. Bonique, Merchant, and others, Grindstone Island, Etang du Nord:

"Inspection necessary, and should be compulsory."

Mr. Sirois, Merchant, L'Islet:

"The inspection of fish is most essential, and should be obligatory, but the inspector should be fully competent to discharge his duties."

Mayor Painchaud, of Magdalen Islands, Amherst:

"Inspection should be compulsory. The question is where it should take place? I say in the place where the fish is taken and sold in the first instance."

Mr. Whalen, Fisherman, Gaspé:

"Inspection necessary, and should be compulsory."

Mr. Dimock, Farmer, Bonaventure:

"I would say, in order to bring our Bay of Chaleurs herrings into good repute, a compulsory inspection is necessary."

Quebec Board of Trade:

"We are strongly of opinion that the compulsory inspection of fish and oil is a necessity, and have frequently urged the Government to enact such a law."

Hon. J. Ferguson, Senator, Bathurst:

"Inspection absolutely necessary and should be compulsory."

Mr. Mathews—Letête, Charlotte Co.—Fisherman:

"I believe the inspection of fish is necessary and should be compulsory, as it would prevent the sale of a great quantity of poorly cured fish, the sale of which has a tendency to injure the reputation of those who might be innocent of carelessness in this respect."

Mr. Heney, Fisherman, Deer Island, Charlotte:

"The inspection of all kinds of fish is necessary and should be compulsory. All parties who put up pickled fish of any description should have the owner's name on each package before selling; and when the inspector inspects them, he should put the brand on them of the quality they are, and his name. There is a great deal of fraud practised in putting up pickled fish of every description. Smoked herring should also be marked and branded in the same way, as there is a great deal of fraud in putting up smoked fish as well as pickled. Both pickled and smoked fish are often sold as good and merchantable, when in reality quite unfit for use."

J. and S. Leonard, Fishermen, Deer Island, Charlotte:

"Inspection is necessary, and should be compulsory."

D. W. Stewart, Collector, Dalhousie:

"Inspection might tend to establish a character for excellence that would be desirable, but if attended with heavy cost would prove an annoyance and tax on the trade."

Collector Robertson, Moncton; Collector, Hickman, Dorchester; Messrs. Cormier and Bourgeois, Fishermen, Cocagne:

"Inspection necessary, and should be compulsory."

Messrs. Snell, Light-keeper, Campo Bello; Tory, Fisherman, Guysboro'; Challoner, Aspy Bay, Sidney, Fisherman; Huston, Liscombe, Guysboro'; Fisherman, and Pride, St. Mary's River, Fisherman:

"Inspection necessary, and should be compulsory."

Collector Perry, Beaver River:

"I think inspection of pickled fish necessary, and should be compulsory, as our local inspectors seldom act."

Collector De Wolf, Horton:

"Doubtless fish exported would sell better if inspected."

Collector Thurber, Freeport:

"Inspection necessary, but should not be compulsory."

Mr. Gordon, Pictou:

"Inspection should be compulsory for exportation and the home market."

Mr. Wylde, Merchant, Port Mulgrave:

"Fish should be classed and inspected. Inspection should be compulsory."

A. M. Rudolph, Harbor Master, Montreal:

"Inspection necessary and should be compulsory."

M. McDonald, Collector, Port Hawkesbury:

"Inspection necessary, and should be compulsory."

Collector Ross, Port Margaree:

"Inspection necessary, and should be compulsory."

Collector Sargent, Barrington:

"I think a strict inspection necessary, and it should be compulsory."

Collector McNeill, Kelly's Cove; and Mr. Bell, Shipmaster, La Have:

"I think inspection necessary, and should be compulsory."

S. T. N. Sellon, Fishery Officer, Liverpool, N.S.:

"An inspection is necessary to give confidence in a foreign market, and should be compulsory."

Mr. Starr, Fisherman, Cornwallis:

"I consider an inspection of fish highly desirable, and it should be made compulsory, in order to prevent an inferior article from injuring the sale of our fish."

Mr. Ross, Merchant, St. Ann's, Victoria:

"Inspection law to be generally useful should be compulsory."

Collector McAulay, St. Ann's, Victoria:

"Inspection is generally useful, causing fishermen to cure their fish in a better manner."

Of some 70 answers made to Question No. 6, in 1869, as to the necessity of inspection, only eight replied in the negative. Two replied contingently, not considering inspection necessary in their own immediate localities.

One gentleman says that the inspection should be made by the present fishery officers of the Dominion.

Another says that inspection would be very beneficial to the fishermen, provided the Government would pay the expense; otherwise, it would only crush them closer to the ground.

(The fee for inspection and branding in Scotland is 4 pence sterling, or 7 cents, per barrel, which has to be paid beforehand by the fish curer, who has to give notice of the number of barrels of herring ready for inspection and branding, and to deposit the amount. Should any of the number be rejected, the fee for such is refunded. The inspection and branding is performed by an officer of the Fishery Board of Scotland, who has to affix his name with the brand, and who is held responsible for his work).

Another, who considers inspection unnecessary says, that "the purchaser should be his own inspector, and that if incompetent, he should not engage in the trade."

(This does not seem reasonable or business-like. On mercantile grounds, the seller and purchaser should know what is being sold and bought. There is reason, however, to believe that many dealers act loosely in the matter of the sale and purchase of fish, and provided that there be a fair margin of profit the dealer is too often indifferent as to the quality. Were the case otherwise, and inspection compulsory in the first instance, there could not be a possibility of so much fish unfit for use reaching Quebec and Toronto as is stated in some of the answers to have been the case).

Another says:—"Inspection is not necessary, the fish being generally inspected on arrival in Quebec."

Another says that "the proper place to inspect is where the fish are caught, packed and sold in the first instance."

Another, who does not consider inspection necessary, considers that where the fishing grounds are so far from each other inspection would entail too much expense on the fishermen, and would therefore effect but little good.

Another, who considers inspection unnecessary, seems to arrive at this conclusion from the fact, as stated by him, that the inspectors are annually appointed by the General Sessions, and are, apparently, therefore, seldom called upon to act.

(If the officers were appointed by the Government this objection would have no force).

Another says, that "an inspection of fish is useless, as at present parties buy on the character of the seller, and generally examine a few barrels of the fish; that when an inspection law was in operation it was of no benefit, as no one would buy on the brand, as no confidence could be placed in it, and that frauds were practised to an immense extent under cover of inspection."

These answers and extracts show most conclusively the necessity of inspection, and of having the same performed by competent Government officers—and the necessity of having the inspection made where the fish are caught and cured—such inspectors being prohibited from trafficking in herring, and to be responsible for their work.

If inspectors could grant certificates of inspection for fish they never saw, and were never within 12 miles of, it is not to be wondered at that inspection has been held to be of no value, either as to quantity or quality.

The foregoing answers also show a very general and intelligent appreciation of the disadvantages under which the herring industry of the Maritime Provinces of the Dominion labored in 1869, in consequence of the absence of an inspection law for pickled herring, and a very widespread desire that this condition of things, still existing in 1889, should be remedied.

Towards the end of the 18th century, notwithstanding that much had been done in the way of legislation and bounties to stimulate and encourage the herring industry in Scotland, a careless negligence and indifference seem to have prevailed among the fish curers of that country. The Dutch were masters in the herring markets of the continent of Europe. Treating of that period, and after fully discussing the different modes or making salt, and comparing the Dutch herring laws with our own then existing laws, the Earl of Dundonald, in his able pamphlet "On the Manufacture of Salt, and on the Herring Fisheries," published in 1784, says:—

"The Dutch, in supplying the different markets, seem to pay attention to the condition the fish are in, to the purity and size of the salt, and to the season of the year. No such attention is paid in Britain; the season of the year, the condition the fish are in and the purity of the salt are all disregarded, and as the saying is, 'all is fish that comes to our nets,' and this will always be the case until proper regulations be made and strictly enforced."

Remarking on this, Mr. Mitchell says:—

"The wisdom of these remarks has been fully proved and established. Wise and salutary laws and regulations having been made and strictly enforced under the directions of a Board of gentlemen acting gratuitously, with practical men as inspectors on the spot, watching that the abundant supply of wholesome food shall be properly cured and packed in sufficient barrels; and thus the ignorant or dishonest curer is prevented from destroying his own trade and profit, and made to prepare the herrings in the best and most scientific manner."

The British Fishery Board was established in 1809. Subsequently a branch of this Board was established in Scotland, under the name of the Fishery Board of Scotland. This Board has done good work, it has an intelligent, active and experienced body of men, general and local inspectors and local fishery officers, thoroughly conversant with the duties devolving upon them, all capable and competent men. These are the officers to whom are entrusted the duties of inspection and branding in Scotland, and their entire honesty and impartiality have never been questioned.

Of this Board, the Commission appointed by the British Government, in 1878, to enquire into the herring fishing industry in Scotland, consisting of the late Mr. Frank Buckland, Spencer Walpole and Archibald Young, already referred to, in their report, thus speak:—

"The Scotch herring fisheries have for nearly 70 years been regulated by the British Board and the Fishery Board for Scotland. These Boards have exercised an important and beneficial influence upon the herring fishery of Scotland. In its carefully prepared annual reports it has accumulated a mass of accurate statistics relating to every point connected with that fishery, and it has trained up a body of officers of remarkable intelligence and energy to carry out the various duties of the Board at the different fishing stations in Scotland.

"The duties of the Board are to give clearances to herring fishery vessels going to sea; to receive notices from fish curers on shore of their intention to cure; to examine the measures for the delivery of fresh herrings as between buyer and seller, and the size of the barrel for cured herrings; to ascertain the quality of the cure; to brand the herrings accordingly, and to collect the branding fees; to attend to the exportation of the fish and inspect the exports, to see that they are in proper order; to maintain order on the fishing grounds, and to carry out the regulations for naming and numbering boats and their sails; to receive and restore lost fishing property; to build fishery piers and harbors, and to furnish returns and statistics of the herring fisheries in Scotland."

Between 1784 and 1857 the Scotch had outstripped the Dutch in the curing and packing of herring, and gained the ascendancy in the European markets, on account

of the improved quality of the Scotch-cured herrings. But in 1857 the Dutch established a Board similar to the Fishery Board of Scotland, and the Dutch Government then determined to take active measures to restore so important an industry, and what they did was to adopt, to a great extent, the regulations of the Fishery Board of Scotland. They constituted a Herring Fishery Board, composed of nine members, and introduced a system of inspection, and of marks or brands.

As the brand is so inseparably connected with the inspection of herring, we will now proceed to consider

THE BRAND AND ITS VALUE.

In some parts of Scotland we found that many of the fish curers labor under the disadvantage of having no sheds or shelter under which to protect the fresh fish from the sun, wind and rain, or to protect the herring in the barrels prior to and after inspection and branding. It must be evident to every one conversant with the injurious effects of the sun on all kinds of animal products exposed to its action, how detrimental to the herring it must be to have the barrels exposed for hours in the shallow vats while delivery is going on, and before the gutting commences, and afterwards to have the herring in the barrels, subsequent to inspection, exposed for weeks or months on the docks and quays without a particle of shade or shelter. We were not, therefore, greatly surprised to find in Stettin, the great continental market for Scotch herrings, that in some instances the Scotch brand was disregarded, while the herring of curers whose gutting, curing and packing we knew to have been done altogether under cover, and their herring in barrels afterwards stored in like manner, and without brand, pass unchallenged by the Stettin dealers, on the strength of the name and established character of the curers alone.

In Fraserburgh, Scotland, the whole process of delivery, gutting, curing, packing and storing is done under ample sheds, substantially built and slate-covered. In the herring curing yards of Messrs. Bruce & Co., and other herring curers in that town, we found the curing processes carried out to perfection, and all appliances complete. The house of Bruce & Co. was established about 70 years ago. They took the first prize, a valuable gold medal, for the best cured herrings at the great Fish Exhibition held in Berlin, Germany, in 1880. Accompanied by Mr. Melville, the local fishery officer, we were kindly shown over the whole premises by Mr. Bruce, who had his coopers unhead numerous barrels of packed herrings, at alternate ends, in order to give us the back view of the fish in the one end, and the belly view in the other. The character of this firm and a number of other fish-curing firms, and the excellence of their fish, are so well established and so universally known on the continental markets that they no longer have their herring branded, but sell freely on the reputation attaching to their own name.

One great advantage in Britain of having good sheds is that in calm weather, and when the boats have a long way to come from the fishing grounds, and the delivery of fish takes place late in the day, the gutting girls can at once go to work, gutting and packing all night by gas light, instead of letting the fish remain over until morning, to the great detriment of the quality and flavor of the herring.

It requires, however, great experience and practical knowledge of the whole business to enable a fish curer to dispense with the brand, and the degree of excellence in the art of curing necessary to beget this confidence in the name and reputation of any firm can only be attained under the operation of a law compelling inspection and branding. The history of the rivalry between the Dutch and the Scotch for supremacy in the herring markets of Europe abundantly proves this, as we have seen. In 1784 the Dutch were ahead of the Scotch. By the adoption of a rigid law of inspection the Scotch got ahead of the Dutch. In 1857 the Dutch adopted the system of the Fishery Board of Scotland and its regulations, and by stricter attention to details in curing and packing, under their law of inspection and brand, the Dutch are again, but only in a general way, ahead of the Scotch, because a very large proportion of Scotch-cured herring are as eagerly sought after in the markets of the continent as the very best Dutch-cured herring.

In common with all important measures of a national character, the brand has, from time to time, been attacked but the result of discussion and experience has been to re-establish the inspection and brand, as related to the herring industry more firmly than ever. We here repeat what in his historical sketch of the herring industry in Scotland Mr. Mitchell says: "The increase of the herring fishery depends very much on the demand for exportation, and this demand requires to be carefully cultivated, not merely by the curers, who may be viewed as the manufacturers of the goods, but by the Government, which, by impartial and just legislation, protects the interests of the fisherman, the consumers at home and the merchants and consumers abroad. That there was an abundance of herring on the Scottish coasts was known for centuries past; but when considerable quantities of them appeared they were of little remunerative value when caught, because the demand was limited to the mere local consumption. Before the specific and legalized size and quality of the manufactured article—the barrel of well-cured herring—could be obtained as goods for commercial purposes, a merchant abroad could not buy herring in Scotland, there having been no legal, distinct, specific form and quality. The curer might say, "My barrels are of every size, and various in quality and price;" but the foreigner could not order nor buy such goods, and he therefore bought herrings which were of legalized size and good quality elsewhere; and although he paid a high price, he obtained what he wished in Holland and other countries; and these countries are ready to supply any quantity if Scotland should be unable to do so.

"Before a proper system of legislation was adopted in this country, and even for some time after the system was introduced, the demand from abroad was inconsiderable; but confidence having been given from years of experience, and the trade based on a solid foundation, under legal enactments fixing measure and quality, the business progresses and bids fair every year to extend and increase."

The tangible symbol and final result of all British legislation may be said to centre in the brand—as that is what has given Scotch herring the reputation they have earned in the markets of Europe—the brand being the seal or impress of inspection.

In 1851 an agitation was raised against the brand. Mr. Mitchell publishes a letter addressed by Mr. Alexander Wellman, one of the principal merchants of Stettin, to Mr. Traill, M. P., London, on the subject of the brand. In that letter Mr. Wellman says: "I take the liberty of stating that the official Brand of Scotch, Crown and Full branded herrings obtains the greatest confidence, not only in our own market here in Stettin, but also in the interior of Germany, where the meaning of that brand is understood; and my own firm belief, and also that of other people engaged in this branch of business is, that it would be most injurious to the trade should the brand cease to exist, for Scotch herrings are only sold in small quantities in this market and neighborhood, they are chiefly sent great distances of from 100 to 800 miles, English, into the interior of Germany and Poland, either by orders or offers without the assistance of commission merchants; for the great expense of forwarding them will not permit a commission to a third party. The great distance likewise prevents dealers from inspecting the herrings on the spot here, who therefore make their purchases solely on their trust in the official brand, knowing that the fish must be well selected and properly cured—that the barrels be of legal size, and that they require to be well and tightly made before the brand can be affixed.

"The abolition of the official brand would entail great difficulties in this trade. When a party purchasers *Crown* and Full brand herrings at present he is bound to receive them, if they bear *that* brand, independent of the quality; and our courts of law have frequently given their decision in accordance with this statement, upon the ground that the British Fishery Board is a Government establishment, and therefore that reliance can be placed on their impartial inspection and strict superintendence.

"Part of the present business consists of consignments by the curer in Scotland, who receives an advance when the herrings are shipped; and my opinion is, that this advance will cease to be given as soon as the official brand is removed, as our merchants here would then be unable to judge what proceeds they will receive out of

them, when sent to the interior; and consequently the Scotch curer must feel it seriously whenever this brand is taken away. This would injurously affect the trade, and seriously affect the fisherman.

"In my opinion, it will be very injurous to the trade should the British Government insist upon the trade to pay for the brand, for the cheaper herrings can be made the greater distance they can be exported, and the larger the consumption will be; because herrings are a substitute for meat, and have therefore to stand in competition in price with beef, bacon, &c.

"Other articles in casks, such as oil, butter, &c., can be sold according to sample, or their quality and contents can be stated; but such is not the case with herrings, for it is impossible to describe each fish in each barrel, or their number, and neither how the cure has been effected, nor whether they have been cured immediately after capture.

"How could the Scotch herring trade in Germany be protected if the superintendence of the British Fishery Board ceased to look after this? So long as the Board keeps up its present character and brand there is no fear of a decline in the importation of Scotch herring into Germany."

In the report of his visit round the herring coasts of Scotland in 1856, Mr. Barry, one of the Inspecting Commissioners of the Irish Fisheries, says:—

"I saw quite enough to impress me with the vast importance, the great magnitude, of the herring fishery on the east coast of Scotland.

"It is quite evident that a great deal of excitement and anxiety prevails among persons interested in the trade on the subject of the proposed abolition of the branding system, and consequent reduction of the Fishery Board establishment. The subject being at present under the consideration of a commission appointed by the Government, it would not be becoming in me to venture my opinion upon the expediency of relinquishing altogether the practice of branding, but I should not only fear that the absence of all superintendence would be highly prejudicial to the herring fisheries, but would tend to diminish materially the hopes which I have formed to see the growing germ of an enterprising spirit on the part of our east coast fishermen not checked in its bud. Notwithstanding the high standard of moral conduct which I am willing to recognize in our north British neighbors, I should be very unwilling to advise Irish fishermen to resort to many parts of the coast of Scotland if the present Fishery Board be extinguished."

Commenting on the establishment of the Dutch Fishery Board in 1857, Mr. Mitchell says:—

"The Dutch herring fishery laws have lately been considerably modified; and the advantages of a Fishery Board and inspecting officers having been fully ascertained from the great success of the British system, the Dutch Government has created a Board of Commissioners, with similar powers to those possessed by the Commissioners of the British Herring Fishery.

"And again, the Herring fishery in Holland, once so successful, having gradually declined, partly in consequence of the improved quality of the Scotch-cured herrings supplanting the Dutch herrings in the continental markets, the Government of Holland wished to take active measures to resuscitate or improve the system in that country, and in 1857 adopted, and copied, to a considerable extent, the regulations which have been so successfully followed out by the Fishery Board in Scotland, and which have brought the Scotch herring fishery to be one of unexampled prosperity. For the first time a Herring Fishery Board was appointed this year in Holland, and several important laws and regulations were enacted, and among others *the Crown Brand has been introduced, together with various brands and marks, expressive of the different qualities*, so that everything proves that great efforts will be used to increase a fishery which, at one time brought so much wealth into Holland, and laid the foundation of its great industrious prosperity.

"For the first time also, the Commissioners of the Dutch Fishery Board, nine in number, are required, in imitation also of our Fishery Board, to give an annual report of the fishery.

"Several rules have been issued by the Dutch authorities relating to salt, which seem very judicious, as well as those relating to the assorting of the herrings, the quality and size of the barrels and the orders to the inspectors, several new ones having been appointed; but everything we see in this report proves that we owe the great increase of the fishery on our coast to the system of management under a well regulated Board, and to the care and attention of the fishery officers, who have become thoroughly instructed and acquainted with their useful, responsible duties, from the great number of years the various laws and rules have been elaborated by the test of experience.

"About the year 1848 several herring curers having been discovered," says Mr. Mitchell, "in attempting to pass off their herrings as entitled to the Crown Brand, which herrings were either inferior in quality or not properly assorted, or the casks not of full size, had their herrings seized by the officers of the Board; or what was also severe punishment on account of the exposure, the purchasers were informed of the error or fraud, and rejected the purchases made. In consequence of this, an attempt was made by the guilty parties to get the Fishery Board and their officers into odium. Some of the English Members of Parliament, ignorant of the impossibility of carrying on the wholesale trade in herring of a marketable quality without a continued surveillance of experienced men, as the fishery officers are, were induced to object to the maintenance of the Fishery Board, and the inspectors or officers; and it was thought necessary in that year to make enquiry 'as to the utility or efficiency of the Fishery Board'. Accordingly, the Right Hon. J. G. S. Lefevre was sent to Scotland to enquire and report; and although he came to Scotland in no way prepossessed in favor of the system, he seems to have been fully convinced of the great advantages of the system carried on; and his report fully proves that he, after the most careful enquiry and examination, was convinced that the system was useful, necessary, and tended to promote the success of the fishery. We beg to quote from this report such passages as have reference to the brand only. Mr. Lefevre says: "Of the various duties devolving upon the officers of the Fishery Board it appeared to me that those which relate to the branding of herrings first demanded my attention, inasmuch as if the continuance of that system were deemed expedient the establishment by which it is conducted must of necessity continue, subject, of course, to any possible reductions.

"At, or previous to the commencement of my enquiries, various representations reached me, both from individuals and bodies of fish curers, which led me to believe that the continuance of the system of branding was deemed to be objectionable by a considerable portion even of those who are in the habit of availing themselves of it; and some anxiety was expressed by the more distant fish curers that I should personally visit Wick, with a view to inform myself as to the opinions entertained on this subject.

"The lateness of the season, and my other public engagements, prevented me from acceding to this suggestion; but in order to give all the fish curers on the east coast of Scotland the opportunity of bringing their views before me, I addressed to them a circular letter, containing certain queries framed for the purpose of eliciting their opinions.

"From the answers to these queries, and from the oral replies of a considerable number of fish curers and fish merchants whom I examined when in Edinburgh, I believe myself to have procured a body of information with respect to the effects of the branding system sufficient to justify me in the statement and suggestions I am about to submit to their Lordships on that subject.

"The representations to which I have alluded as having been made against the continuance of the branding system adverted to the general objections to which such systems are liable. In reference to these objections I may observe that the practice of stamping or branding articles of commerce by public officers, with a view to authenticate their genuineness or good quality, which existed in this country in respect of various kinds of goods, has, by degrees, been almost wholly discontinued.

"It was found that although it might secure to the purchaser that the article should not fall below a given standard, it tended to prevent its rising above that standard; that it discouraged the improvements of private enterprise, inasmuch as it promoted a uniform limit of price, which it was very difficult to pass by any difference in quality.

"These and other similar objections have been stated in various forms by such of the fish curers as have expressed themselves desirous that the system of branding herrings should be discontinued. These parties concur in the representation that it places upon the same level the careful and industrious curer and the less careful and less industrious, inasmuch as the price of branded herrings at the same time and place is uniform, whoever may be the curer, and whatever may be the pains and care he bestows on the cure; and this important point is admitted by many of those who are favorable to the branding system.

"They further state that the dealers who purchase at the fishery stations make their bargains, in the first instance, with those who cure their herring, not under cover, but in the open air, which is not so good a process, and who sell them at a cheap rate, and thus depress the price of the better article.

"They complain that, whereas, in other kinds of business, industry, skill and honesty have their reward in increased custom and better prices, this is not the case with respect to the exportation trade in cured herring, owing to the levelling effect of the official brand.

"It is pointed out that, although the brand is by law optional, and no one is compelled to obtain it, yet so long as a considerable number of the trade use it, it cannot be safely dispensed with by the remainder; and that the delay and trouble necessarily occasioned by the conditions requisite to be fulfilled produce some expense and inconvenience, and sometimes the loss of markets. They complain that the detention of the herrings during the number of days required before they can be lawfully branded leads to a large simultaneous export, which gluts the foreign market. Some of the witnesses, moreover, have stated that the export trade to the continent of Europe is over-stimulated by the facilities to which I shall presently more particularly allude, and that exporters pay too little regard to the state of the demand in the continental markets, but export at all hazards; and as an illustration of this practice, they advert to the enhanced price of green—that is, uncured fish; and they assert that the curers are at the mercy of the fishermen. [NOTE.—This is reversed now (1889), as all fish being sold by auction, the fishermen are at the mercy of the curers, and in Yarmouth the fishermen complained of this]. They refer to the increase of the red herring trade, and the improvements in that branch of cure, to which the branding regulations do not extend, and which is conducted on the ordinary principles of competition, without the artificial aid of the Government officer, as a fair illustration of the result of placing the white herring trade on the same footing."

(NOTE.—We beg to refer to the chapter in this report on "Red Herring," where it will be seen that the absence of inspection and the branding system has been ruinous to the red herring industry, and paved the way for all kinds of dishonesty in putting up and preparing red herring).

"On the other hand, I feel bound to state that a very large majority of curers, measured both in number and in amount of herring branded by them, are decidedly favorable to the continuance of the brand, as compared with those who have expressed unfavorable opinions. Of those whom I orally examined, Messrs. Methuen, Simpson, Robertson and others, brand amongst them upwards of 50,000 barrels of herrings out of the total brand of 148,000; and amongst the replies from the fish curers to whom my printed queries were sent, those who urged the continuance of the brand (not including the parties orally examined) represented more than between 40,000 and 50,000 barrels.

"The facts and considerations adduced in the evidence favorable to the continuation of the brand appear to me to support the following propositions:—

"That of the branded herrings, by far the greater portion go to Prussia and the countries adjacent to the south of the Baltic.

"That (unless in the early part of the season) few herrings are sent to those countries except under the sanction of the brand.

"That a high minimum of quality and cure is secured under the system of branding, not only by the refusal of the brand when the herrings are not duly prepared and cured, but because during the whole process of preparing and curing (a process so rapid in its operation, and carried on by such large bodies of persons, as to render it very difficult for each separate curer to watch over those whom he employs), the fishery officer circulates among those employed, examines from time to time the progress of their operations, points out defects in the cure or selection, and stimulates the negligent, by warning them of the possible refusal of the brand. This service performed by the fishery officer many of the fish curers notice as being particularly useful.

"That the brand has the full confidence of the merchants and consumers in those countries is a fact testified, not only by the replies and evidence of the great majority of the fish curers on the east coast and of the fish merchants whom I examined, but also by various representations from continental merchants with whom I have corresponded.

"That branded herrings are accepted with little examination, and pass from merchant to merchant on the continent, and without the necessity of opening the barrel, except in comparatively few instances.

"That the brand prevents disputes as to quantity, quality and cure, and especially those disputes which originate in a falling market, from a desire on the part of the purchaser to throw them back on the seller.

"That the currency (if such an expression be allowed) of the branded barrels facilitates dealings in them, and among those facilities advances on bills of lading, in which the articles being described as Crown, Full branded herrings, are known to be of a definite quality and readily saleable.

"That the brand being an authoritative declaration of the quantity, quality, selection and cure, herrings can be and are ordered by foreign merchants more freely than if such an authentication did not exist, and they can be and are purchased on the spot at the fishery station, without any previous knowledge of or relation with the fish curer.

"That the discontinuance of the branding system might, at all events, temporarily alter the course of the export trade; that some time might elapse before confidence in the individual curers would take the place of the brand.

"That at first, there might be distrust sufficient to occasion some diminution of the demand, which might be still further diminished if (which is by no means improbable) any falling off in the cure by the inferior class of curers were to damage the reputation of British herrings in the continental market.

"That these results would be aggravated if an official Government brand for Norwegian herrings were established—a possibility which is adverted to by one of the witnesses.

"That the existing state of the continent of Europe (1856) and the diminution of the demand for white herrings in Ireland, occasioned by the failure in the potato crop, render the present not a favorable juncture for making a change in the established system of the herring trade."

"After giving my best attention to the facts and considerations which I have above set forth on both sides of this question, I deem it my duty to state that if the question of continuing the brand related only to the home trade in white herring, these appear to me to be not adequate grounds for supporting it; but, as respects the foreign trade, which is sufficiently large to be an object of the highest importance to Scotland, the branding system forms so essential a part of its arrangements, that its abandonment might cause such derangement and contraction of that trade, and consequent loss and inconvenience to those engaged in it, and to the large bodies of the working classes employed, not only in fishing, but in the various operations

of curing for the continental market, that I feel compelled, notwithstanding the objection in principle to which it is liable, to recommend that it should still be maintained, and, as a necessary consequence, that the establishment of the east coast fishery officers should be continued.

"I am disposed to think, however, that it may be worthy of consideration whether it may not be advisable to charge a small fee or duty upon the branding of each barrel. This would throw a portion of the expense of the establishment upon those who immediately benefit by it, and would thus lessen what is, in effect, a bounty on the export herring trade, at the expense of the other classes of the community. It would likewise encourage the enterprising curer to rely on his own brand, as the saving of this fee might counteract the disadvantage of his contending against the Government brand."

* * * * * *

The contingency apprehended by Mr. Lefevre, in the seventh last foregoing paragraph is just what has happened to damage to some extent the character, and to injure, to some extent, the demand for Scotch cured herrings in Stettin, the great continental market, and to give the Norwegians and the Dutch an ascendancy, the former to a very considerable extent, in the German markets—an ascendancy which otherwise they could not have obtained. It said that the quality of the Norwegian herrings, in the first instance, as taken from the sea, is much inferior on the whole to the quality of the Scotch herring, although at times, and especially in 1889, the quality of a large portion of the catch taken on the north-east coast of Scotland was very inferior, consisting largely of "Spents." But the Norwegians, like the Dutch, take very great care and pains in curring their herring and in packing them, and they are thoroughly alive to the necessity of doing so, in order to secure a share, a name and position in the markets of the continent.

In the course of our inquiries we ascertained that the Governments of the maritime countries of Europe, having herrings upon their coasts, are all deeply sensible of the great importance of the herring industry; but from all we could learn, it would appear that the Norwegian Government takes the most active interest in the development and promotion of their fishery industry, and the promotion of their herring trade—if we measure that interest by the wise and paternal legislation of that Government and the Parliament of that country, and the liberal and judicious expenditure of money made on behalf of the fishing population, not only by direct encouragement to the fishermen, but also by the improvement and construction of local harbors and landing piers, for the benefit of those engaged in the Norweigian fisheries.

Next to the Norwegian Government, probably the French Government manifests the greatest interest in the development, increase and protection of the herring fishing industry in that country. Much useful legislation has been enacted, and a heavy protective duty imposed by the French for the promotion of their herring trade.

The Dutch Government also appear to be indefatigable in devising and adopting legal measures for the promotion of the great herring industry in that country in every way.

In Britain there has been much legislation for the regulation, protection and promotion of the herring industry since A.D. 1240, and the establishment of the British and Scottish Fishery Boards have been of the utmost benefit to the herring fishing industry of Britain. Complaints, however, are made as to the want of local harbors on the north and north-east coasts of Scotland, and the imposition of the branding fee is felt by many to be a hardship. While large sums of money are expended on harbors in the south, and for the advancement of the general prosperity in other directions, it is felt, generally, that the fishing industry of Scotland, being a very important item of the national trade, has not received from the Legislature that degree of consideration, encouragement and aid to which it is entitled.

Between all these Governments there is a race, and a keen rivalry for the markets of interior Europe, Germany especially, where the consumption of herrings

is very great, and it would naturally be supposed that a knowledge of this fact, which must be well known to every fish curer and fish merchant in Scotland, would have put them on their guard and prevented the exportation, by any of them, of herring to Stettin, of an inferior quality, thereby jeopardizing an important trade, and giving other nations a footing in that market which otherwise they could not have gained. Yet this was what was done; and the exportation to Stettin some years ago of unbranded herrings and of branded herrings, cured in the open air and exposed to the elements for weeks subsequent to branding, has done much to injure the herring trade and temporarily, at least, to impair the implicit confidence heretofore placed in the Crown Brand.

In 1888, the Fishery Board of Scotland, through the Home Office, sent out circulars to all the British Consuls on the continent of Europe and parts of North Africa, soliciting information as to the demand or probable demand, for Scotch-cured herring in their respective consulates. In his reply, the Acting Consul at Stettin gave the following figures, showing the importations at Stettin of herrings from all countries in the year 1887. These are as follows:—

	Barrels.
Scotch herring	310,191
Norwegian herring	186,652
Dutch do	5,876
Swedish do	1,295
Bornholm, Pomeranian, herrings	598
In all	504,612

As elsewhere stated, the sales of Scotch-cured herring in Stettin in 1885 amounted to 402,982 barrels, and in 1886 to 371,954 barrels, showing a very considerable falling off. In relation to this very serious decrease we cannot do better than quote the following editorial article from the *Glasgow Herald* of 1st October, 1889, the leading paper of that city:—

"THE SCOTTISH HERRING TRADE WITH STETTIN.

"We regret to find, from a consular report, that the demand for Scottish herrings in Stettin, which forms an important feature of our trade in these fish, continues to decline. According to the tabular statement given, the number of barrels exported from Scottish ports in 1888 was only 292,105, as against 310,191 in 1887, and 371,954 in 1886; whilst in 1885 the figure was still higher, 402,932 barrels having been forwarded to Stettin. It appears that Swedish herrings are beginning to find more favor in some of the German markets than Scotch-cured fish, which are decidedly less in favor than they were a few years ago. It is complained that 'Scotch production' has remained stationary, or indeed retrograded a little, a result, perhaps, of the ease with which the necessary brand can be obtained; whilst Norwegian, and latterly Swedish curers as well, have been making great efforts to study the demand, and prepare for it, by curing their fish in the mode desired. It is pointed out in the present report that the early caught Scotch herring are packed before they have been perfectly cured; the fish not having been sufficiently *pined* (or shrunk) the barrels are not properly filled. Another fault which is referred to is, that the selection of the fish might be greatly improved, and that the 'brand' in the case of branded foods, ought to be an undoubted guarantee for the contents. An equal standard in the size of the herring barrels, it is recommended, should be maintained, in order that retail purchasers may be aware of the average contents.

"Swedish curers are improving upon the Scottish system of curing, by carefully avoiding all its defects. The packing is equal to the average Scotch filling, and the selection of the fish is carefully attended to, with this result, that the Swedish and in many cases the Norwegian herrings, are supplanting the Scotch cure in the German markets; and should the supply of fish hold good, the Swedish herrings, unless Scottish curers make a united effort to amend the defects in their cure, are likely to

obtain and maintain a still better position in the markets than has yet fallen to their share."

This article goes to confirm the opinions we formed on the subject, namely, that the present unfavorable position of Scotch-cured herring in Stettin is due to the negligence of some Scotch curers in exporting herring before they have had time to *pine* or shrink, to season and mature in the barrels, and in the exposure of herrings to the sun, both before being cured and after inspection. It is quite possible, and we think very probable, that what may be considered an injury to the herring by exposure to the sun before curing may be such an injury as may not develope into visible or perceptible deterioration within the ten days, the time allowed the fish to "season" before the brand is affixed, and yet that the results of such injury, aggravated by subsequent exposure to the sun in the barrels, may develope into serious deterioration before the fish reach Stettin. A celebrated physician of Edinburgh holds that a bottle of olive oil may be completely injured and its medicinal qualities completely destroyed by one day's exposure to the sun in a shop window. So there is nothing here at all inimical to the value and integrity of the brand.

The able and well worded report of Mr. Lefevre did not finally settle the battle of the brand; for it is stated, as recorded by Mr. Mitchell, that in the year 1856, in consequence of objections by some members of the English House of Commons to the expenditure incurred in supporting the Fishery Board, and the system of superintendence and branding, and notwithstanding the elaborate and carefully prepared report of the Right Hon. J. G. S. Lefevre, which went fully into the question, and proved the advantage and propriety of continuing the system, a second Commission of Inquiry, consisting of two English gentlemen, Bonamy Price and Frederick St. John, and an Irish gentleman, Capt. Sullivan, R.N., was appointed, whose opinions did not agree, and the members of the Commission, therefore, gave in separate reports, the majority in number having reported in favor of the continuance of the brand and of the system. To exhibit the opinions of the different members, we give the following extracts from the report of Messrs. Price and St. John, a remarkably well written and elaborate report, going over all the arguments for and against the inspection by the fishery officers, and the system of branding, which is too extensive to give at length; but the most striking remarks furnished by them are the following:—

"The first argument pleaded by the defenders of the brand states, we conceive, the real issue to be tried. We have to deal with an established and flourishing trade. It employs an immense capital, draws out of the sea a large proportion of the revenue of Scotland, and is the chief means of subsistence of a considerable part of the population of that kingdom. Still more, it exhibits those signs of healthy life for which the invigorating impulses of competition are sought and valued. It is progressive. It grapples with formidable rivals and conquers them. Since 1848 the quantity of herrings imported from Great Britain into the ports of Stettin, Dantzig, Hamburg, and Konigsberg has increased from 100,297 to 318,263 barrels in 1855, whilst the Dutch imports into the same places have declined from 5,019 to 1,300 barrels, and the Norwegian from 194,862 to 122,423 barrels.

"Is it politic to disturb such an organization? Can an adequate motive be alleged strong enough to call for and justify interference? Is it desirable to destroy, in exchange for another, a machinery which is certainly the concomitant, but which is also represented by a majority of those who carry on the trade to be an efficient instrument of its prosperity? Such we consider to be the practical question to which we are required to give an answer.

"Now, it is essential to observe that the services performed by the branding are necessary for the herring trade and must, under any system, be accomplished by some machinery or other. Every part of the work done by the fishery officers is not only useful, but indispensable. Gutters and picklers must be watched, for a few broken or ill-assorted fish would greatly impair the mercantile value of a barrel of herrings. *There must be inspection before purchase.* That the fishery officers discharge their duties with admirable judgment is cheerfully, and even gratefully,

acknowledged by all parties. Amidst the many attacks made on the brand, there was no accusation that the vast export which it covered ever deceived the confidence of the buyers.

"It cannot be said that the abolition of the brand is demanded by public opinion in Scotland. It encounters the active hostility of some portion of the press, but the great majority of the traders are loud in its favor. On the west coast, which supplies the home markets, and does not use the brand, there is no marked demand for its abolition. We are at a loss for a principle on which we could urge the Government to take away from a great trade a convenience which we have shown to be harmless, which will cost the nation nothing, and whose value will be attested by the surest of proofs—the free demand of the traders to purchase (and use) it.

"On all these grounds, we have come to the opinion that the abolition of the brand is inexpedient; and we beg to recommend to my Lords its continuance, on condition that it shall be self-supporting."

Capt. Sullivan concludes his minority report as follows:—

"Having given the whole subject, which was entirely new to me, my most serious consideration, I have no hesitation in advising strongly, that instead of attempting to continue the Government interference in this objectionable manner, it should be entirely withdrawn, after sufficient notice being given, and the trade left to depend upon its own merits alone. I cannot conclude the subject without bearing my testimony to the merits of the officers of the Fishery Board as a body. It is highly creditable to them, that out of the large number of witnesses examined privately, many of course opposed to the officers, and some few annoyed because at one time or other their fish had been rejected for the brand, on what they considered too slight grounds, not one failed to do justice to the strictly honorable conduct of every officer they had met with."

Further, on the subject of the brand, Mr. Mitchell refers to the matter, as under:—

"Were any additional evidence requisite to prove the great advantages of the system of inspection and superintendence by the fishery officers, we would suggest the perusal of a very able pamphlet written at this time (1856) by a gentleman of high standing, and of great practical experience, who, for many years, was largely engaged in exporting herrings to the continent of Europe—Walter Biggar, Esq.—and who is now retired from business, and has no connection with the Board or the fishery.

In this pamphlet Mr. Biggar says:—

"'I maintain that it is next to impossible for a man to buy a cargo of herrings, entirely upon his own skill and judgment, unless he has been present at the curing and packing of the fish from the commencement. There are rogues in all trades; and it was only the other day that a butcher was fined £10, by the sitting magistrate in Edinburgh, for offering unwholesome meat for sale. If a man will attempt this on a stall in open market, how much easier to escape detection when the unwholesome article is packed in the middle of a cask, and covered with salt and pickle.

"'Though I was upwards of thirty years engaged in the herring trade, and understand it as well as most men, I confess myself unable to buy a cargo of herrings, with safety to myself, if the seller be a rogue, and determined to cheat me. I should feel quite as incapable to do so, on my own judgment, as I should be to buy a silver spoon on my own judgment, which had not first passed through the assay office.'"

It is worthy of note and remarkably coincident, that in 1849 the appointment of Right Hon. Mr. Lefevre to make certain inquires respecting the Fishery Board, and the Crown Brand, with a view to the abolition of both, took place after certain fish-curers had been detected in attempting to pass inferior herrings as entitled to the Crown brand, and had their herrings seized by the fishery officers in consequence.

That the appointment of the Commission consisting of Messrs. Price and St. John, and Captain Sullivan, in 1856, for the same purpose, took place after some fish-curers had been annoyed, because at one time or other their herring had been rejected for the brand; and

That while we were in Scotland in 1889, some of the fishery officers on the east coast of Scotland seized a quantity of herring, in barrels made of pine staves, because the staves were abnormally thick, although dressed off at the ends to represent the lawful thickness, whereby the capacity of the barrel was diminished so materially as to diminish the quantity of fish in the barrel to the purchaser. Following closely on this seizure, an agitation commenced in several of the fishing stations on the east coast, demanding the abolition of the brand. A meeting had been held in Wick before we left, for the purpose of discussing the subject. Referring to that meeting, and the agitation in general, the "*John O. Groat Journal*" of Wick, a paper thoroughly conversant with the whole fishery trade and its requirements, says:—

"Well, suppose the brand to be abolished. How is the curing business then to be made profitable? This is a question which cannot be well answered. As to the fishery officers, it is not to be believed, from anything said or written, that many barrels which were branded along the east coast should not have been branded at all, so, reflecting, as it were, on the judgment of the fishery officers. Any one who may attempt to argue for the abolition of the Board, from this point will utterly fail, and it would be well that no one should attempt it. We are glad to see that in Scotland this is not being done. The fact is, the quality of the herrings of this year has disappointed many, and perhaps none more so than those who made c. i. f.—costs, insurance and freight—purchases. Inferior quality and a falling market mean, in many cases, repudiation, from repudiation arise complaints.

"'In too many instances, we regret to say, blame has been cast upon the fishery officers, for which they have not in the very slightest degree been responsible."

The "*John O'Groat Journal*" newspaper, of Wick, above quoted, of December 24th, 1889, contains the following, which very probably settles the question of the brand, for some time to come:—

"Fishery Board and the Herring Brand."

"A meeting of the fish curing trade was held in the Town Hall, Fraserburg, on Wednesday. Chief Magistrate Park presided. The business was to consider the question of abolishing or retaining the crown brand for cured herrings exported to foreign countries. Representatives of the larger firms appear to be in favor of abolishing the brand, while the representatives of the smaller firms were almost unanimous for retaining it, with certain modifications, suggested in recommendations, read by Mr. J. S. Davidson, from a previous meeting of exporters, who had sent to the continent this season over 300,000 barrels. The recommendations, which were agreed to by a large majority, were to the effect that, in order to give the continental merchants confidence in their purchases, no full herrings under 11 inches in length should receive the brand; "Medium Fulls and "Spent" not to be branded under 10 inches and 10½ inches respectively; smaller fish, in their several classes, if branded at all, to be branded as mixed, thus dispensing with what hitherto was know as the "Mattie" brand. A committee was appointed to communicate the views of the meeting to the Fishery Board."

The Fishery Board of Scotland had previously sent a delegation of their officers to Stettin, to ascertain all particulars in relation to the rejection of some of the brands, and no doubt the modifications proposed will meet the difficulty.

One thing clearly established by the foregoing testimonies is, that the herring trade, as at present constituted in Britain and the other European nations engaged in it, cannot be successfully conducted independent of the supervision and inspection of some organization invested with authority in the premises, and the use of the Crown brand—and that it is imperatively necessary that every possible care be taken to protect the fish from the sun or its influence before curing, so as to prevent the slightest injury to the herring, or taint of incipient deterioration, which may not become apparent within the legal ten days, but is sure, nevertheless, to develope in its own time—even subsequent to the inspection and branding of the officer—and the necessity of carrying on all the processes of curing under cover.

BEAM TRAWLING.

Beam trawling is practiced to a considerable extent around the British coasts, greatly to the annoyance and discouragement, and we believe the detriment of the established coast fishermen, who look upon the beam trawler as a sort of marine marauder, taking all he can, by unfair means and machinery, out of the sea, wantonly destroying what he cannot use, and inflicting serious injury upon the herring fisheries by disturbing the herring, scaring the shoals of herrings from the fishing grounds—and destroying the spawn.

On the subject of beam trawling, as on every other subject relating to the herring fisheries, much discussion has taken place, and the weight of evidence, as well as the preponderance of popular opinion, so far as we could learn, are against the trawlers. One thing is very certain, and that is, that they have to a great extent depleted the flat fish fisheries, because one does not see, either in the markets or on the tables, such sole, plaice or flounders as were to be had in Britain twelve years ago. The most of this kind of fish we saw were poor, small, immature fish, mostly unfit for food. The beam trawler scoops up everything that comes in his way—immature fish, fry spawn and shell fish—and it is said that the destruction of these is very great and, ruinous to the local fisheries—quite unnecessary, and should be either entirely prohibited or else regulated by stringent regulations rigidly enforced.

From Mr. Mitchell's excellent book on the herring, we learn that the subject of beam trawling has been thoroughly discussed since 1852, and although we are not aware that this mode of fishing has made much progress in the Maritime Provinces of Canada, yet we deem it our duty, in connection with the objects of our mission, to refer to this matter in a general way and in connection with the subject of spawn. On this subject as on nearly every other relating to the herring fishery, great difference of opinion seems at one time to have prevailed, but in the light of an intelligent experience and the exercise of some degree of common sense, it is quite possible to arrive at correct conclusions on this, as on all other controverted fishery subjects.

Beam trawling on some parts of the coast of Ireland gave rise to serious disturbances, on the part of the drift-net fishermen, in certain portions of that country.

In some instances Commissioners appointed by the Government to investigate the causes leading to such disturbances reported in favor of the beam trawlers, while others reported against the system. In consequence of certain action on the part of Lord Vernon in 1817, a Parliamentary enquiry by a Select Committee on the South Devon fisheries was ordered, at the instance of the great body of the fishermen on that coast, by whom a document was signed to the following effect:—

"Brixham Quay, Torbay, 11th June, 1817.

"The undersigned, being persons concerned in the fisheries between Start and Exmouth Bay, do humbly declare our opinion that it will materially promote and benefit the said fisheries if trawls and drag nets are prohibited being used in Torbay from 1st May to 1st November, and in Start Bay from 1st May to 1st October."

The recommendation of this Parliamentary Committee, after hearing evidence, was:—

"That it will conduce to the benefit both of the public and of the fishermen themselves if Start Bay, Torbay and Exmouth Bay, on the southern coast of Devonshire, are kept free from trawl and shore drag-nets during the spawning season; and they are the more induced to recommend some regulations to that effect, as it has been clearly shown that it will not throw any fishermen out of employment during these months, and will be the means of increasing the quantity of cheap and nutritious food, on which all the lower ranks of society in that part of the country chiefly subsist.

The Convention Act, that is, the Act regulating the fishery arrangements between France and Britain in 1843, was the first measure of legislation restraining trawling on the English and Scotch coasts generally. But after nine years' experience of the Act, the guardians of the British herring fisheries have, in a special

statute, 14 and 15 Victoria, chap. 26, sec. 6, repeated the restriction upon trawling in the vicinity of herring fisheries, when the regular herring fishing has commenced.

Mr. Mitchell quotes from the report of a Parliamentary Committee of the British House of Commons in 1853, the following:—

"The last measure of legislation, 14 and 15 Victoria, chap. 26, sec. 6, extending to the whole coasts of Scotland and England, has been enacted at the instance of the Commissioners of British fisheries, having a large and well trained staff of officers, watching closely the interests of the most important and most prosperous fishing community in the Empire, and that it may be considered an unqualified affirmation of a similar regulation in the French Convention Act, but in more stringent terms and after nine years' experience of its effects."

Further, on this subject, Mr. Mitchell publishes a letter from Mr. Thomas Anderson, an extensive fish merchant of Glasgow, on the injury to spawn and fry caused by the beam trawlers. Mr. Anderson says:—

"Having been extensively engaged in the fish trade in Scotland for the last fifteen years, I have observed, with very much regret, the great injury done to the white herring fishings by the use of trawl nets. Nearly about ten years ago the trawl was introduced into the Firth of Forth, and in accordance with the increase of the use of the trawl net the gradual decrease in the take of white herrings has been the result. Also, on the west coast of Scotland (particularly the Ayrshire coast) it is a well known fact that ever since the introduction of the trawl net there has also been a gradual decrease in the take of herrings, and I am fully convinced in my opinion that the use of the trawl net must destroy either the spawn of the fish or the young fry.

"I may also mention that from one station I had from 700 to 800 young turbot in one day lately, and scarcely a marketable fish among the whole lot, the most of them not weighing more than from 1 to 1½ lbs. These were some of the produce of the trawls; and my objection principally applies to inlets, bays, firths, &c., or anywhere near the shore. My object being to get as many marketable fish as possible, I am, of course, in no way interested in the prevention of any particular mode of taking fish which shall not be injurious to the fisheries in general.

"I speak from great experience, being the owner of large stations in the Island of Lewes, in the Firth of Forth and the east coast of Scotland, my principal headquarters being in Glasgow, and employing in one way or other 800 to 900 hands."

"In 1858 the Fishery Commissioners of Ireland, seeing the advantage of restricting river trawling, ordered that the following localities on the Irish coast be subjected to the fence law, pointing out to other Governments the propriety of following such a wise example. This order prohibited trawling inside of certain lines in Dublin Bay, east coast Dundram Bay, Galway Bay, Dingle Bay, Bantry Bay, Waterford Harbor and the Wexford coast.

"They also ordered that in regard to Galway Bay and Wexford coast, trawling be prohibited in all places where there are boats engaged in herring or mackerel drift-net fishing, and that trawl boats shall keep at a distance of at least three miles from all boats engaged in herring or mackerel fishing, and that whenever herring or mackerel boats shall commence drift-net fishing in any place on or off the coast of Wexford, the trawl boats shall depart therefrom.

"By the British Act, passed August 13, 1860, the Scottish Fishery Commissioners were authorized to prohibit, on the coasts of Scotland, the use of any trawl, drag, or beam net, injurious to the spawn of herring or to the herring fisheries, under a penalty of not less than £5, and not exceeding £20 sterling."

In concluding his interesting references to beam trawling, and in reference to the investigation had in 1860, as to the alleged injuries inflicted on the herring fishery in Galway Bay by trawlers, Mr. Mitchell very correctly says:—

"We have no doubt, from careful observation, not only at Galway, but also in other quarters, that beam trawling is injurious to herring shoals, and may diminish

or utterly destroy the annual visits of the herrings, as they are so easily scared away. For instance, as soon as a herring shoal spawns, thither the various kinds of flat fish assemble, and the beam trawls following these tear up and annihilate the spawn in large quantities, and the herring may cease to return."

In their report to the British Government in 1878, the Commission, of which the late Mr. Frank Buckland, the celebrated naturalist, was a prominent member, arrived at certain conclusions which are referred to elsewhere in this report. We here refer to the following heads:—

"No. 3.—Nothing that man has done, and nothing that man can do, has diminished, or is likely to diminish, the general stock of herrings in the sea."

"No. 4—Either from the operations of man however, or from some other cause, herrings have been deterred from entering the firths and sea lochs, of Scotland, the in the same numbers as formerly."

"No. 5—The fishing for herring has, in consequence, been gradually prosecuted farther and farther from the land, especially on the east coast."

Mr. Buckland and the other members of the Commission arrived at the conclusion that beam trawling did not cause any destruction of herring spawn around the British coasts, and that therefore there existed no necessity for prohibiting or regulating the beam trawling fishery—in this respect differing from all the authorities we have seen or heard of on the subject. But it appears that Mr. Buckland, after the writing of that report, and before his death, had changed his mind in this repect. We met a Yorkshire gentlman in Edinburgh who is a member of one of the local Boards, under the Board of Trade for the protection of salmon, and the regulation of salmon fishing, who informed us that Mr. Buckland was an intimate friend of his; that before his death he had changed his mind on the subject of beam trawling, and became fully convinced that it was most injurious and destructive to the spawn of the herring, and that it should be prohibited on all herring spawning grounds. This gentleman also informed us that the local Salmon Fishery Board, of which he was a member, had devoted much attention to this subject, and that they were so fully convinced of the destruction to herring spawn caused by the trawlers on their section of the coast of Yorkshire that they had decided to apply this fall to the Board of Trade for enlarged powers under the Fisheries Acts of Great Britain, authorizing and empowering them to interfere, for the protection of herring spawn, with the operations of trawlers, and to regulate and prohibit their movements within territorial waters.

And so convinced were the present Government and Parliament of Great Britain of the destruction caused by trawlers to herring spawn in certain forths of Scotland, heretofore exempted from the protection extended to many other spawning grounds on the British coasts, that on the urgent representations of the fishermen and others interested in the success of the herring fisheries in those localities, an act was passed by the Parliament of Britain in August last (1889) extending the operations of previous Acts, regulating and prohibiting beam trawling in certain others of the great firths of Scotland. And we know from press reports that the passing of this Act gave very great satisfaction to the fishermen and others of those localities which had been suffering from the operations of the beam trawlers. So that the latest utterance of the Parliament of Great Britain on the subject of beam trawling, its regulation and prohibition in certain districts where the herring are known to spawn, is to the effect that the system, uncontrolled, is injurious to the herring fisheries, and destructive of the herring spawn.

While it is desirable that the fishermen should be hampered as little as possible by legal enactments, it is wise and proper, and necessary, that the Legislature should regulate and control such a vast and important industry. Man cannot change the arrangements of nature, or minimize the great ravages committed on the herring by the myriads of fishes and birds who prey upon it! But man can avoid and prevent all needless waste, and all reckless, wanton destruction of fish and spawn.

In Great Britain, in addition to the quantities of immature flat fish taken by the trawlers immense quantities of immature haddock, whiting and other such fish less than the size of a small herring are taken, as can be seen everywhere in the markets, and on the tables of the people. It is also very common for large quantities of immature fish taken by the trawlers to be carted away by the farmers and used as manure, a reprehensible practice, to which we shall refer further on. On this continent, in the depletion of the fisheries of our neighbors we have example and proof of what a reckless system of fishing can accomplish. While it may to some extent be true that man, by the use of fair and reasonable appliances, and careful modes of fishing, cannot diminish the general stock of herrings in the sea, yet, as in the case of our neighbors we see what man can do, by the adoption of needlessly destructive measures; and Mr. Buckland and his fellow commissioners in their conclusion No. 4, admit that on the east coast of Scotland the herring have been driven further off the land—no doubt by a reckless mode of fishing. How much better would it be for the fisherman, the trader and the consumer, to allow all kinds of fish to attain to some degree of size and maturity, so that they may be "good for food," rather than to be taken, at such stages of their existence, as to be fit only for manure. We should, as a people, guard against all tendencies leading to such results in the case of our fisheries. The meshes of all trawl nets, or other nets used for surrounding fish should be large enough to allow the escape of all immature fish—and time and space should be afforded for such escape. These immature fish are really not fit for food, and the Governments and Legislatures of the fishing nations should put a stop to such widespread destruction.

SPAWN.

Intimately connected with the subject of beam-trawling as we have seen, is the question of spawn. This question too, has been much discussed in Britain, and has not yet been definitely settled. One party to the controversy contends that the herring spawns on sandy, stony or gravelly bottom in shallow water. Another party contends that it spawns in the water loosely altogether off from the bottom, and that the spawn can be seen immediately afterwards floating in the water in the sea giving it a whitish appearance by day, and a brilliant phosphorescence by night. Mr. Mitchell says.—

"The male herring has two milts of an oblong shape and whitish color; and the female has two roes, which are darker than the milts; The number of eggs contained in a female herring was found by Dr. Harmer to be 36,960. Herrings have been sometimes found with the roe of the previous season in a bag, or covered with a skin, in addition to the roe of the following season. At Thurso, an intelligent fish curer told me that in the inside of a herring he found the old roe of the previous season, the eggs of full size, covered over with two layers of fat, and a thick dark film adhering closely to the back, and outside of this the two other parts fully formed, about 3 inches in length.

"After remaining on the coast for a number of weeks, the herring deposits its spawn on hard, clayey or rocky ground, or gravel before leaving the bays or estuaries where it resorts. The female first ejects the roe, which is afterwards impregnated by the ejection of the milt of the male. Sauer describes the mode of impregnation from actual observation, and states that in the inner harbor of St. Peter and St. Paul, Kamschatka, the herring were extremely numerous; and he observed that on the 7th June, the herrings made circles of about 6 feet in diameter, and in the middle of this circle, at the bottom another, no doubt the female, was fixed. When the tide went out he saw the acquatic plants and the stones covered with the spawn, which was devoured by dogs, gulls and crows.

"We have fully ascertained that the shoals generally fix in one locality for deposition, and that immediately after spawning the herrings proceed to sea. The nets of the fishermen are then often covered with the detached, unfecundated eggs of the female; but those eggs found loose in the nets are driven out by the pressure of the twine. The really oviparous fecundated spawn, of which we have specimens, is

of a different description, and wonderfully manifests the sublime behests of creation. The proper incubation, as before mentioned, is as follows:—The female remains quiescent at the bottom; the whole of the roe is at once deposited; the milt thoroughly ripened in the male herring, has become changed from a solid mass to a liquid of the colour and consistency of cream; the roe although placed in the briny flood, becomes a firm, united mass somewhat larger than, but similar in shape to the roe in a full herring. This lifeless mass or egg-bed has the power of adhesion—it grasps firmly the stones, the rocks, the sea-weed, &c., so much so, that we have found it difficult to remove or separate it, until the mass was dried or dead; the young being thus protected from the effects of storms and currents, to a certain extent from being devoured by fishes, and firmly fixed, probably in a suitable feeding ground. Thereafter the eyes are first observable—at least, a small black spot is first seen in the egg. Then the head appears and in fourteen days or perhaps three weeks the young are seen in great abundance near the shore, of a very small size; in six or seven weeks more they are observed to be about 3 inches in length and move about in large shoals in winter and spring on the various coasts, and in the rivers and bays generally resorted to by the herring shoals, and it is likely that they attain to full size and maturity in about eighteen months. Lacepede says, that in North America the spawn of the herring have been carried by the inhabitants and deposited at the mouth of a river which had never been frequented by that fish, and to which place the individual fishes from these spawn *acquired a habitude, and returned each year bringing with them probably a great many other individuals of the same species.*

In the Firth of Forth it is sometimes found that the herrings deposit their spawn on the ground or banks between a mile or two to the westward of Queensferry and Inchkeith, being an extent of about ten miles; but many spawned herrings deposit their spawn on the clayey and rocky bottom between Inchkeith and the Island of May."

"Man applies many means to add to the destruction of this useful fish, the herring. The most unwarrantable is the ground, or beam trawl net, which, if at all used on gravelly, hard or rocky bottoms, must annihilate vast shoals of herrings in a state of spawn; and considering the quality of the fish taken by it this instrument should be prohibited in certain localities at certain times."

Mr. Mitchell further says:—

"1861.—The fishery off the coast and near Dunbar, was very abundant this year, and yielded several thousand barrels, the great proportion of which was sold fresh of which no account was obtainable. About the 30th of August the shoals began to deposit their spawn a short distance from the harbor, and on the 3rd day of September the fishermen found that a large body of herrings remained fixed to the ground in the process of spawning, the ground being of a rocky or stony nature. When the fishermen ascertained this, several of the boats proceeded to the spawning ground, and letting their nets down to the bottom took up large quantities of herrings, some of the boats having each about 60 crans (or barrels) of herrings. When discharging their cargoes, the boats and nets were covered with the ripened and expelled spawn. The fishermen most unwarrantably continued to fish the herrings in this state even during the day, thus disturbing the fish on their spawning ground on Sunday the 1st September and two following days. This disturbance of the spawning shoal was most injudicious and the more to be condemned when it is considered that the fishermen had just about finished a most successful season. The ground upon which the herring deposited their spawn is about half a mile from the shore and about three-quarters of a mile in length and a quarter of a mile in breadth. It was easily known from the sea having a whitish opaque appearance and from the strong fishy or oily odour. Immediately after the spawning the herring shoal started off."

"1862. As it was considered of material importance by the Honorable The Commissioners of the Fishery Board to ascertain the circumstances connected with the depositing of the spawn of the herring, the cutter "Princess Royal" was appointed to proceed to the localities where the herring were supposed to deposit their spawn,

in the spring or beginning of the year 1862, and men accustomed to use the diving apparatus were employed to go down to the bottom of the sea and examine the ground, and to bring up such spawn as might be discovered by them. They went down at two different places and found no spawn, but having been told that "spent" herrings had been taken near the May they went down in the beginning of March to the west of the May in 15 fathoms of water, where they found spawn firmly attached to the stones, and they sent up a considerable number of such stones, of from 3 to 16 pounds in weight, with the spawn fixed upon them. The bottom there was found to be stones, shells, sand and shingle."

"On the east of the May, a considerable quantity was found in 20 fathoms water adhering to coarse, shelly sand. The deposit was about three-fourth of an inch thick and was attached to a cake of the rough shells and sand."

In the debate on the "Fisheries Bill in the Legislative Council of Canada, in 1865, the Hon. Mr. Price said:—

"The herring go near the shore to deposit their eggs, and when ripe for spawning cannot retain them any longer. Sometimes a gale comes on, and the fish are thrown up upon the beach. I have seen herring and capelin lying 6 inches or a foot in depth along the shore in the Gulf, and not only they, but their spawn, are destroyed."

Surely, such a mass of direct testimony should settle the controversy, as to whether the herring spawn on the bottom as above set forth, or whether they spawn in the sea off the bottom, leaving the spawn tossing about, at the mercy of the waves, the tide currents, and the winds. It is agreed on all hands that the movements of the herring shoals, commencing in June, are towards the spawning grounds. If they don't spawn on the bottom, why these movements? Because, if the spawn is merely deposited in the sea loosely, any part of the ocean would do as well.

THE SUPPLY OF HERRING IN THE SEA.

The take of herring in Scotland is enormous. The late Mr. Buckland, in 1878 estimated it at 1,000,000 barrels. Referring to this, in the report of Commission of that year he says:—

"Consider what this prodigious take represents. A barrel of herrings contains, on an average, 750 fish; but as a certain number of fish are wasted in the operation of curing, 800 fish must be taken for every barrel of herring cured. In that case, 800,000,000 herring must be taken annually by Scotch fishermen alone. The Norwegian herring fishery is as productive as, or more productive than the Scotch fishery; and the English, the Irish, the French and the Dutch fisheries, are also very productive. Estimating the gross produce of these four fisheries at only the same amount as the Scotch fishery, 2,400,000,000 herrings must be annually taken by four nations, the British, the French, the Dutch and the Norwegian, or in other words, two herrings for every man, woman and child in the world.

"But prodigious as this capture is, there are grounds for believing that the destruction of herring by man sinks into insignificance, if compared with the destruction effected by enemies over which man has no control whatsoever."

"Consider," wrote the Royal Commission of 1862, on trawling for herrings on the coast of Scotland, the destruction of large herring by cod and ling alone. It is a very common thing to find a codfish with six or seven large herrings, of which not one has remained long enough to be digested, in the stomach. If, in order to be safe, we allow a codfish only two herrings *per diem*, and let him feed on herrings for only seven months in the year, then 2 herrings+210 days=420 herrings is his allowance during that time. In round numbers 3,500,000 cod, ling and hake were taken in Scotland alone in 1876. It would be a great exaggeration to suppose that one cod was taken out of every 20 in the sea, but assuming that 5 per cent. of the cod in the sea were actually caught, 70,000,000 cod, ling and hake must have existed off the coast and islands of Scotland. If, however, each of these 70,000,000 cod, ling and hake consumed 420 herrings in a year, they must altogether have consumed 29,400,000,000 herrings or 12 times more than all the herring caught by Scotch, English, Irish, Dutch, French

and Norwegian fishermen put together, and nearly 30 times as many herrings as are taken by Scotch fishermen alone.

"The destruction of herrings by gannets is also enormous. It is estimated that on Ailsa Craig alone there are 10,000 gannets. Assuming that each bird only takes 6 herrings a day, the gannets on Ailsa Craig alone must consume 60,000 herrings a day, 1,800,000 herrings a month, or 21,600,000 herrings a year. On the assumption that there are 50 gannets in all the rest of Scotland for every one on Ailsa Craig, the Scotch gannets must consume more than 1,110,000,000 herrings a year, or 37 per cent. more than all the Scotch fishermen catch in their nets."

"Gannets and codfish are, however, by no means the only enemies to which the herrings are exposed. Whales, porpoises, seals, dog-fish, and predaceous fish of every description are constantly preying upon them from the moment of their birth. The shoals of herrings in the ocean are always accompanied by flocks of gulls and other sea birds, which are constantly feeding upon them, and it seems therefore no exaggeration to conclude that man does not destroy 1 herring for 50 destroyed by other enemies.

For many years, we were informed, the herring shoals did not visit Shetland, and very little was done by the Shetland fishermen in the way of catching them. Of late years, however, the shoals made their appearance, and the result has been that some 400 boats or more, with the corresponding drift of nets, have been built and purchased by the fishermen of the Islands. And the fishing proved remunerative until 1889, when such extensive bodies of dogfish appeared off the coasts, that the fishermen could not venture to put their nets in the water, as the dogfish, if they come in contact with a net, will so roll up and entangle themselves in it, by means of the long horny spikes attached to the fins and the tail, as to render the work of disentanglement simply impossible. These dogfish remained in the Shetland waters during the whole period of the autumn herring fishing and completely destroyed it. We were in the house of a curer in Scotland, who had made arrangements to pack 50,000 barrels, and who had sent up a large quantity of material, barrels and salt, with coopers. Before we left Wick he had returned, and had not succeeded in securing 5,000 barrels. This serious loss to himself and to the fishermen was caused entirely by the continued presence of the dogfish in such numbers, and to such an extent, on the coasts, as to render herring fishing impossible. The dogfish, therefore, may be looked upon as the natural enemy, not only of the herring, but also of the fishermen, and the herring curer. When the dogfish finds herrings gilled in a net he bites off the tail half as clean as could be done with the sharpest knife. When he gets entangled in a net, the manner in which he rolls himself up in the net, and rolls up the net with him, is simply incredible. So the fishermen have good reason to dread the dogfish.

"The destructive powers of man, therefore, is insignificant when compared with the destructive agencies which nature has provided; and nothing that man has hitherto done, or can do, has produced, or will produce, any appreciable effect on the number of herrings in the sea."

To give an idea of what man is doing, and the great increase which has taken place in recent years, and the improvement in the means of capture, Mr. Buckland says :—

"During the last 20 years the substitution of cotton nets for hemp nets has, it may almost be said, revolutionized the herring fishery. Twenty years ago a boat carried 24 nets made of hemp, each net 40 yards long, with 28 or 29 meshes to the yard, 10 to 12 score meshes deep, and weighing 25 lbs. Each boat carries now (the boats are larger than then) 50 to 60 nets made of cotton, each net 60 yards long, with 35 meshes to the yard; 18 score meshes deep, and weighing 12 to 14 lbs. A boat, in other words, used to carry 960 yards of netting, it now carries 3,300 yards. The nets used to be 6 or 7 yards, now they are over 10 yards deep. They used to present a catching surface of 3,000 square yards, they now present a catching surface of 33,000 square yards. The 3,000 square yards of hemp netting used to weigh

600 lbs; the 33,000 square yards of cotton netting, now, weighs a little more than 600 lbs.

"Without increasing the weight of nets to be worked, each boat has increased its catching power five fold. There are more than 7,000 boats in Scotland fishing for herrings. These boats must, in the aggregate, have nets 23,000,000 yards long, and certainly, in the aggregate 230,000,000 square yards of netting. The Scotch herring nets would, in other words, reach in a continuous line 12,000 miles. They would go more than three times across the Atlantic from Liverpool to New York."

The concluding words of the third last paragraph will, of course, be read subject to, and in connection with the fact that before his death Mr. Buckland changed his mind as to man's ability to cause an appreciable destruction of herring by an unnecessary destruction of spawn.

Mr. Mitchell, who has made the study of herring, in all its phases, a prominent work of his life, in his book in connection with the subject, and preliminary to his insertion of a letter by Mr. Cleghorn, of Wick, makes the following appropriate remarks:—

"*The fecundity of the herring* may generally be supposed to make up for the great quantities fished and destroyed by birds and the finny tribes; yet it is unquestionably a subject of national importance to consider how far the Legislature should further protect the growth of the herring, and prevent all unnecessary disturbance or destruction of the shoals of herrings and their fry and spawn. We have stated different causes which may tend to diminish the supply; and it will be seen by the letter, of which we subjoin a copy, from Mr. Cleghorn, of Wick, a gentleman who has paid particular attention to the subject, that there may be reasonable grounds for all due care being taken that legislation shall be applied when necessary. We see, almost every session of Parliament, new Acts as to the salmon fisheries, which are comparatively of much smaller value than the herring fishery. The following is the letter referred to:—

"'Wick, 7th October, 1856.

"'Sir,—Since you have taken the herring in hand, allow me to give you some facts which may be of use to you. There is no subject that more requires elucidation.

"'In the "Quarterly Journal of Agriculture, and Highland and Agricultural Society's Transactions" for June, 1839, you will find a good paper on the herring by Mr. Mitchell, of Leith. Please turn it up and read it. The herring is much more local than you fancy. The reason why they are found apparently suddenly making their appearance on the shores is, that they just then have matured their milt and roe, and self-preservation is then lost in their anxiety to preserve the species. Then milters and spawners come together. Till now they were bent on individual preservation; each was on his own hook; they avoided nets and other dangers. Now all sense of danger is lost—their only aim now is the preservation of the race, and when in this state sudden destruction comes upon them in a cloud of nets.

"'We have on our shores races of herrings that we know come to maturity in July, August and September. Up to 1851 we took yearly on an average 20,000 barrels, but in July, 1851, we took 30,000 barrels. This seems to have been their culminating point, for in July, 1852, we took only 7,618 barrels; in July, 1853, 7,829; in July, 1854, 2,396; in July, 1855, 2,664; and in July, 1856, 2,977 barrels.

"'Our July races then are done; we have fished them out; we have all but extinguished them. We are now doing for the August and September races what we have already done for the July ones. Of these, in 1856 we were only able to take 90,000 barrels, although we brought to bear on them 19,000,000 square yards of netting, the greatest extent of netting ever used here. In 1855 they afforded us 135,000 barrels.

"'If the herring belong to the waters in which they are fished, my conclusion, that we are extinguishing the races or reducing them so low that the produce of the fishery will be less than the outfit, is not so absurd as some would insinuate; but it

may be made more apparent when I tell you that the space over which our boats fish here is from the Pentland Skerries to Clythness, about 30 miles. On this portion of sea our 1,051 boats every night during the fishing season spread 19,000,000 square yards of netting, or nets 500 miles long. The wonder is not that we are extinguishing the races, but that they should have lasted so long. The netting has been every year expanding, in consequence of the shoals contracting. The poorest districts use the finest and most extended netting. In 1818 the netting of all Scotland was 10,000,000 square yards, and with that we took 340,894 barrels; while it appears by the Fishery Report of last year that we employed 80,031,507 square yards, and caught 766,703 barrels, showing that with eight times the extent of netting we were able only to double the quantity of herring caught.

"'The late Mr. Wilson, of the Board of Fisheries has settled the character of ground on which the herring spawns—see *Blackwood's Magazine* for April last (1856). Were the Government anxious to aid the fisheries they ought to survey the ocean bottom, and map it out, and let us see at least the portions on which the herring cannot spawn. They never spawn on sand; I believe it must be on rough ground. At all events something must be done. Our summer shoals are now so much reduced that we must change our time and the place for fishing. New ground must be sought, longer voyages made, or we must take to winter instead of summer fishing. We must get deep and safe harbors.

"'I believe, unless the matter be viewed in the light I have done, this fishery is lost. My views are most unpalatable to all engaged in the trade; and they have so long looked on the herrings as being as enduring as the ocean that my doctrines have been spit upon by them.

"'I am, your obedient servant,

"'JOHN CLEGHORN."'

It is only right to say that although Mr. Cleghorn appears to have had authentic facts and data in his favor at the time he wrote, that subsequent results as to the Wick fishery did not verify his predictions. Mr. Cleghorn was not engaged in the herring business, but devoted much of his time to the study of the herring industry, and was animated purely by a desire to guard and protect that industry. This we learned from a fishery officer who was well acquainted with Mr. Cleghorn. Our own opinion is that the herring are excessively fished on the east coast of Scotland, and that Mr. Cleghorn's voice was in the right direction.

THE MOVEMENTS OR MIGRATION OF HERRINGS.

The question of the periodical migration of the herring, whether they annually come from long distances or from the seas immediately adjacent to the coasts where taken, is still unsettled. On this subject Mr. Mitchell says:—

"Various accounts have been given of the visits of the herring upon our coasts. Many writers have stated, and some scientific works still state, that the herring comes from the Artic circle in large shoals of some leagues extent, dividing into lesser shoals on coming towards the north of Scotland; one body proceeding to the west coast of Scotland and to Ireland, and another to the east coast, each directing its course southward. Others state that although the herrings do not come from the Artic circle, they at least come from a considerable distance northward of Scotland. But we consider that the herrings inhabit the seas adjacent to the coasts, bays or rivers where they resort for the purpose of spawning, and that after spawning they return to the sea in the neighborhood, where they continue and where they feed until the spawning season again approaches, while the fry, on being vivified, continues near the spawning ground until it is of sufficient size."

Both theories have difficulties to encounter, no doubt, but the theory of Mr. Mitchell seems to have the greater of the two, and that is in the well known fact that from time immemorial great shoals of herring, accompanied by a numerous contingent of whales, gulls and gannets, hake and dog-fish, covering great areas of

the sea, periodically make their appearance off Cape Wrath, the north-west point of Scotland, setting in to all appearance from the north, and on nearing the land dividing into two great divisions, the larger one taking eastward along the north of Scotland, and thence heading southward on the east coast, occupying weeks in its progress, the other and smaller wing taking down the west coast. By the time these herrings reach Wick they are generally pretty full of roe and milt. Whence do they come, and for what purpose? What becomes of the fry from the spawn deposited on the east coast of Scotland? Do they remain in those seas, or are they led by instinct to return by the Pentland Firth and the Orkneys and Shetland to the winter grounds in the north, whence their progenitors came? Mr. Barry, a member of the Fish Inspection Commission, after his tour on the Scottish coasts, on this subject says:

"The steady periodical resort of the great shoals of herrings to the east coast of Scotland, for the last fifteen years, goes far to contradict the general belief in the capricious migratory habits of that fish; but although they keep their ground upon the shores of the North Sea, they frequently vary their position, sometimes abounding on the shores of Caithness, and as far north as the Orkneys, and sometimes on the shores of Aberdeen, Kincardine, Forfar, Fife and Haddington, and as far south as the Tweed. It is an object of great importance to the fishermen to be made acquainted speedily with the most favorable localities. Along the whole east coast there are stationed intelligent officers, whose duty it is to communicate constantly with headquarters at Edinburgh, and the facilities afforded by telegraph would enable the authorities to keep us informed of the movements of the fish."

In the debate on the Fisheries Act, in the Legislative Council of Canada, in 1865, Hon. Mr. Letellier said:—

"The subject of the migration of fish is not yet well understood. There is an annual migration, but it is not so regular that we can base calculations upon it. As far as the herring are concerned, they do not frequent the river now as much as they used to do. The character of the shore changes, and the fish go elsewhere to spawn. Near my residence the sea carried off a shoal, and there are now very few herrings caught on the shores of the parishes of St. Denis or River Ouelle. In Rimouski the fish are now more abundant than they used to be. In Témiscouata they stay longer than formerly. The changes in the bed of the river and the constant navigation of certain channels are the chief causes of the difference."

FLUCTUATIONS IN THE MOVEMENTS OF THE HERRING.

Mr. Buckland on this head says:

"It is worthy of remark that the herring fishery in time past has always been liable to remarkable fluctuations, over which man apparently has had no control; and there is no reason to suppose that the fishery will be exempt from such fluctuations in the future. The herrings, without any assignable cause, have suddenly left whole lochs, or even portions of the coast for long periods of years, and have afterwards, equally without any assignable cause, returned to them. We received accounts of such occurrences in numerous places in Scotland, but these fluctuations in the herring fishery are by no means confined to Scotland alone. The same thing has occurred in Norway, Denmark and other countries. There is no evidence that it has been due to excessive fishing, and we are bound to conclude that the migrations of the herrings have been, and still are, subject to laws which man up to the present time has been unable to discover. A failure of the fishery at any portion of the coast ought, under such circumstances, to occasion little or no disquietude; on the contrary, as in times past, the herring has been variable in its movements, it is reasonable to assume that its movements will be variable in the future. Failure, therefore, in particular places, even though protracted over a series of years, ought not only to be regarded with equanimity, but even to be expected. It is possible, however, that in the case of the narrow firths and lochs of Scotland the great increase in the number, length and depth of the nets may have some bearing on the fluctuations."

On this subject Mr. Mitchell says :—

"From 1690 to 1709 a very extensive fishery was carried on at Cromarty, whither the herrings annually resorted in considerable abundance. Shortly after the Union (1707) an immense shoal was thrown or rather ran themselves on shore, in a little bay to the east of the town. The beach was covered with them to the depth of several feet, and salt and casks failed the packers. The residue was carried away for manure by farmers in the neighborhood. Strange to say, however, they left the firth in a single night, and no shoals again made their appearance for more than half a century."

Further, Mr. Mitchell says:—

"The herring is very capricious, and has been driven away by injudicious action on the part of fishermen," as stated in another chapter of this report. On the subject of the return of herring to forsaken grounds in the north, the British Consul at Gothenburg, Sweden, addressed to the Earl of Derby the following letter:—

"British Consulate, Gothenburg, 4th January, 1878.

"My Lord,—I have the honor to report that great shoals of herrings, of the large kind, which disappeared from the coast in 1809, have now made their appearance again north of Gothenburg, on the coast of this country. This information I have thought proper to communicate to Her Majesty's Government, as British subjects came to this country during the former herring periods with ships to trade in this article. I may here make mention that my own father, Thomas Duff, a native of Inverness, and cooper by trade, came over to this country to teach the Swedish people the art of curing the herring according to the Scotch method. The first appearance of the herring took place at Christmas, when whales were seen following the shoals of herring to the coast.

"I have, &c.,

"F. W. DUFF.

"The Right Honorable
"The Earl of Derby."

THE HERRING A TIMID FISH.

Mr. Mitchell says :—

"The herring is a very capricious fish, and we have before stated instances where the shoals have been driven away, such as from the Swedish coast, and where they were scared away by continuous fishing, night and day, and the shoals never returned."

Mr. Mitchell's book was published in 1864. The herring had not returned then, but they returned, as Mr. Duff shows, above, in 1878, after an absence of sixty-nine years. Mr. Mitchell, speaking of the extent of the herring industry in the town of Burntisland in 1775, says :—

"The want of judicious superintendence was the cause of the shoal of herring being driven away. Herrings like other gregarious animals, are easily disturbed, and the fishing during the day fairly drove the shoals off in the course of time from their haunts."

In 1819 an act was passed for the encouragement of the herring fishery on the coast of Ireland—Mr. Mitchell quotes clause 15 :—"And whereas shoals of he rrings are frequently frightened from the entrance of the bays and creeks by vessels moving and shooting the nets at improper places, and by shooting long lines at the entrance of the bays and creeks, no vessel on the coast of Ireland shall moor or shoot nets or lines in any place forbidden by the Inspector under the penalty of £20.

"Clause 16. No net shall be shot or set on the coast of Ireland during the day time, under a penalty of £10, nor at any time or place fordidden by the Inspector, under a penalty of £20."

The British Commission of 1878, of which Mr. Buckland was a member, found, as already quoted elsewhere, that, "It is desirable to prohibit the shooting of movable nets between sunrise and sunset, as no doubt shooting nets in daylight scares

the fish, causing the fish to sink. In this way the act of one or two improvident fishermen may cause loss to all the others."

An old intelligent fisherman in Wick told us that the fishery there, he had no doubt, had suffered greatly from the objectionable action of many fishermen in shooting the nets early in the afternoon, as soon as they reached the fishing ground.

OFFAL.

Throwing offal or refuse of herring into the sea in the neighborhood of the fishing grounds is another reprehensible practice, certain to drive the herring away, as they appear to be very sensitive to offensive sights and smells. It appears that in Sweden this had something to do in scaring away the fish, as above referred to.

Mr. Mitchell says:—"Those vessels which, after gutting the herring on board, throw the refuse into the sea, ought not to be permitted to fish where there are herring shoals; and this law ought to be enforced by the Dutch Government (whose fishing vessels cure on board), which might order that the portions taken out of the herrings at gutting be barreled up for use, for the purpose of making oil, or for manure, or for both purposes.

"The quantity of herrings fished in Sweden, prior to 1809, was about as great as that fished in Scotland; yet by allowing the refuse of the herring which had been boiled at places on the coast, for the purpose of obtaining the oil, to reach and taint the sea, the shoals left," and as we have seen, did not return for 69 years.

Mr. Mitchell further says:—"We are of opinion that any operation which tends to disturb or scare the herring may drive away or diminish the shoals, such as leaving the nets loaded with herrings in the water, when they are unable to be taken out in consequence of their weight, throwing the refuse into the sea after gutting the herring, as is done by the Dutch busses, or allowing the refuse of the oil of the herring to go into the sea, as was done on the Swedish coast."

CLOSE SEASON FOR HERRING.

"The question of a close season for herring was very fully discussed by the British Commission in 1878, and much evidence taken in relation to the point. The fish-curers were almost unanimously in favor of a close season for herrings. So were many of the fishermen, with other witnesses, to whose opinions much weight was attached. The Commissioners arrived at the conclusion that it would be impossible to adopt a close season in respect to the herring, chiefly because the same close season would not suit every locality, as the great shoals or armies of herrings appear in the north-west of Scotland in the beginning or middle of May. The great fishery in the Minch, the sea between the Long Island on the west and the Mainland is prosecuted from about the middle of May to the beginning of July. The fishery on the east coast commences about the middle or end of July, and continues until the beginning or end of September. By the Act of 1860 (23 and 24 Vict., cap. 92), a close season was instituted on the west coast of Scotland, but it was found to work so oppressively on the fishermen that in 1865 it was partly repealed by 28 Vict., cap. 22. The Commission strongly urged the entire abolition of the Act, and they concluded that the objections which may be urged to a close season more than outweigh the benefits which would result from it.

WASHING HERRING.

The washing of salt herring is condemned in Britain—the curers holding that the brine formed of the salt, the blood and the fat adhering to the packed herring helps, contrary to an opinion at one time prevalent in a very marked degree, to preserve the fish, and to retain all the delicate flavor and the nutritious qualities of the herring—and that the use of the proper quantity of salt and the exclusion of contact with the air of the atmosphere, the chemical action of the salt is sufficient to prevent deterioration of the brine and tainting of the fish. The Scotch curers consider that the washing of herring before salting is most detrimental to the fish, injurious in every way, and destructive of the quality of the herring. The only

washing done in Scotland to herring is, as mentioned elsewhere, in washing, sometimes, the herring used to re-fill the barrels after packing, should the fish appear dirty or greasy.

ROUND, OR UNGUTTED HERRING.

Although at one time a considerable quantity of ungutted herring, exclusive of red herring, were put up in Scotland, the practice has been discontinued, and we were told by leading curers that no one would now think of packing in pickle ungutted herrings—that to do so would be a waste of time and material. The Dutch at a very early period in the history of their herring fishery found out the benefit of gutting herring. They claim that after the fishing of herring commenced in the Meuse in 1163 the fishermen of Zurich Zee were the first to fish them and put them in barrels; and "that the fishermen of Biervlief were the first who invented the better method of preserving them salted, *by gutting and taking out those parts of the herring which before caused them to spoil much sooner.*"

In an essay published in England in the early part of the 17th century, entitled, "Some Observations on the Present State of the British Fisheries, and the Means of Improving Them," the writer says:—"We want only encouragement to carry this trade entirely from the Dutch, and one of the greatest would be to make early herrings fashionable. Indeed, all lovers of their country ought to have them on their tables in the month of July, if possible."

BORACIC ACID.

It is said that the Norwegians use boracic acid in curing herrings, but whether they do so in combination with salt, in the large barrels we cannot say. In Edinburgh, however, we met persons who had used Norwegian herrings, put up in tins, and preserved by boracic acid. They said those herrings were pleasant to the taste, and that they did not consider the nutritious qualities of the fish in any way impaired. They said they had heard that scientific men disapproved of the use of boracic acid in this way as being detrmental to health.

In London we were informed that a large portion of the milk used in that city was treated with boracic acid before it was offered for sale, in order to preserve its sweetness.

If this be true, we can only say that the most pleasant milk we had on our journey was the milk we used in London.

THE HERRING INDUSTRY OF THE DOMINION.

The herring industry of the Dominion, which has attained to very respectable proportions, in which a large amount of capital is invested, and in which a large amount of labor and energy are engaged, is known to be at present in a languid and unsatisfactory condition. The demand for our herrings has been checked, in consequence, in many instances, of the inferior quality of the herrings placed upon the market, and of the packages in which they were contained. This inferiority of our fish does not arise from natural causes, because there can be no doubt that the herrings on the Atlantic coasts of the Maritime Provinces are equal to the herrings of any nation in Europe, excepting, perhaps, the Lochfyne herring of Scotland. The inferiority of our herring as placed on the market arises from preventible causes—from careless handling of the fish, when taken, exposure to the sun, deficient curing and packing. This condition of things is well known to the retail dealers and the consumers, and it is admitted largely by many of the large dealers engaged in the trade. The answers made to the questions sent out by the Committee of the Dominion House of Commons in 1869, and what we have recently learned of the views of many of the Nova Scotia merchants on this subject, show this. This knowledge is encouraging, because it implies co-operation, and the co-operation of all concerned in the trade will be necessary in order to place this important industry upon a satisfactory, mercantile, national basis.

This industry with us is very much in the condition in which the herring industry of Scotland was over 100 years ago. A Scotch writer in 1749, referring to the state of the herring industry in Scotland at that time, says :—

"It is very plain that our not succeeding hitherto (in the herring fishery) in any degree proportionable to what might be expected from the possession of such advantages, has been owing rather to want of care, to want of diligence, to the want of due regulations, to the want of sufficient capital, and finally to the want of a proper authority to guide, instruct and inspect the conduct of such fisheries. These and these alone must be the causes of former failures and miscarriages." and Again :

"In the five years from 1779 to 1785, notwithstanding all the expenditure of public money, and the enterprise of private individuals, the herring fishery, for want of sound legislation and judicious superintendence, had nearly ceased to be of any importance." And again :

"From the irregular manner of curing herrings at that time on the Scottish coast, no progress of any importance had hitherto been made. Although abundance of fish might have been caught, the ignorance or dishonesty of curers in preparing inferior fish, put up in unfit, inferior packages, with inferior salt, prevented herrings from being received with favor either at home or abroad."

At that time Scotch herring were generally cured by the fishermen themselves, and that being the case, it could not be expected that the work would be well done. Take, for instance, the great pork industry of Ontario. What would it be if every farmer cut up, cured and packed his own pork? Instead of doing this, he brings it to the market in the carcase at the proper season of the year, and sells it to the pork packers, men who have facilities for the work men who have knowledge of and experience in the trade, who can divide the carcasses into the different grades required by the trade, and who can put it up in a uniform manner, and in accordance with the laws and customs regulating that particular and important industry.

Mr. Bruce, of Frazerburgh, told us that his father was one of the first fish-curers who made the curing of herrings a special business on the east coast of Scotland, and that as soon as the business of curing and packing was taken out of the hands of the fishermen, and performed by a new class of men, devoting their capital, their intelligence, skill and energy to the work of curing, leaving the fishermen all their time to attend to their boats and nets, the character of Scotch herrings at once went up in the markets of Europe, and kept gaining ground in every market in which they were offered for sale.

The whole history of the herring industry of Scotland, in its earlier struggles, and its later successes, shows that well cured herring will always find a market, and that stagnation in the trade is generally due to the action of careless, indifferent, ignorant, or dishonest curers.

The Fishery Board of Scotland is indefatigable in its efforts to increase the demand for Scotch herrings on the continent of Europe and elsewhere, and to this end, through the Foreign Office in London, it has been the means of procuring much useful and important statistical information as to the herring trade in the markets of the several countries of Europe, in Morroco, Tripoli, Tunis, Turkey, and the United States.

The replies received in answer to the circulars of the Fishery Board of Scotland, so sent out, from British Consuls abroad, show, that notwithstanding the great efforts of the Norwegians, the Swedes and the Dutch, and the temporary check to the Scotch herring trade in Stettin, there is still a large demand for Scotch-cured herring on the continent of Europe and elsewhere, proving that properly cured and well packed herrings will always command a ready sale. Mr. Wellman, from whose letter to Mr. Traill, M.P., London, we have already quoted, says that a large portion of the herrings imported at Stettin are sent inland 800 miles or more.

It is well known that people living far inland from the sea must and will have herrings, but they are particular as to quality, and must have them properly cured and packed.

REPLIES OF BRITISH CONSULS.

From the reply of the Consul at Vienna, Austria, we learn that the increase in the imports of Scotch herrings in that city amounted in 1887 to £23,000 more than 1886; that these herring all bore the "Scotch Government stamp," as it is there called, and the endeavors to introduce Dutch herrings there had failed, Scotch being preferred, and that those herrings all came from Stettin, also, that bloaters are imported into Vienna from Bergen, Norway, showing that bloaters can be sent long distances with perfect safety to quality and sale.

From the reply of the Consul at Brussels, Belgium, we learn that smoked or red herrings packed in barrels do not find sale there, but that they must be put up in hampers containing 100 to 200 fish. It also appears that a considerable amount of Scotch herrings find their way indirectly into Belgium through Holland, where the barrels are unpacked, and re-packed by the Dutch in small packages.

From the reply of the Consul at Copenhagen, Denmark, we learn that Norwegian herring caught in the autumn, and put up in packages of various sizes, are preferred to Scotch herrings, although the Norwegian herrings caught in the spring of the year are not liked, because they lack the requisite fatness.

From the reply of the Consul at Paris, we learn that Scotch pickled herrings are rigourously excluded from France by the imposition of a high duty; also, that the French railways were to be asked (in 1888) to lower the rates for carrying fish, and increase the facilities for through traffic, so as to give a better market to fresh or lightly salted and smoked fish, such as bloaters, kippers and others. In Bordeaux the general preference is for small packages of pickled fish.

From the report of the Consul at Stettin, it appears that the demand for herring in Germany can be increased by careful selection and curing of the herrings, and putting up in small packages. The designation or classification of herring at Stettin imported from Scotland is as follows:—"Full Brands," "Unbranded Fulls," "Spents," "Matties" and "Lewis," thus showing that the "Lewis" herrings—that is, the western coast herrings—are, on account of their excellence, rated as a distinct class of herring.

From Genoa, Italy, the British Consul reports as follows:—"As far as my information goes it would seem that Scotch fish as at present packed will never sell freely; but I am told that there might well be a considerable market for Scotch herrings, pickled in brine, if carefully prepared and brought to market in a nice-looking, attractive condition. The Italians are an artistic people, and like things not only to be good but to look pretty." (May not this be the case, to some extent, with the people of other nations, too).

In his reply, the British Consul at the Hague, Netherlands, says:—"It appears that in consequence of the present (1888) low price of Dutch salt herrings, and their very superior quality as compared with those cured in Scotland, the demand for the latter has so fallen off in this country that the total importation is reduced to 500 or 600 barrels annually and that unless the Scotch curers can either succeed in so *improving the quality of their fish* as to make it equal to that cured by the Dutch fishermen, or should be unable to undersell the latter considerably in the Dutch markets, there seems little or no probability of an increased demand arising for them in this country.

"*The superiority of the Dutch fish, lies altogether in the fact of the herring being cleaned and slightly salted immediately on being caught, on board the cutter whereas the Scotch fish is cured on shore.*"

The British Consul at Togaurog, Russia, reports that "the best quality of herrings sold in this neighborhood received by way of St. Petersburg, are designated 'Dutch Royal,' and 'Scotch' herring, but are all of the same quality, and probably imported from Wick, Scotland."

"The British Consul at Riga, Russia, says: The demand for Scottish cured herrings, which were originally introduced into this town many years ago, has steadily increased, and the fish are much liked by the consumers, not only throughout the Provinces, but they also find purchasers in the interior of Russia. A large

quantity of the Norwegian-cured fish are imported here, and are brought into competition with the Scotch herring."

"As far as I have been able to gather from merchants engaged in this trade, it appears that it is thought that a reduction in the present high rate of import duty would cause an immediate increase in the demand, and another point on which they lay great stress is, that if the curers wish to find a good market and a greater demand for their fish, *more attention should be paid to quality, cure and packing*, and it is also suggested that there should be *an obligatory Government Inspection*."

These extracts show conclusively that the tastes of people as to herring, in different countries, vary considerably some customers at the same time preferring Scotch, and some preferring Dutch-cured herrings. They also show that it is quite possible and very probable that the large quantities of herrings sold as "Dutch," are really the "Lewis" or west coast of Scotland best herrings, re-packed into small packages of neat and attractive make, and sometimes mixed with Dutch herrings. They also show the necessity of a careful selection of the fish, and of bringing the salt into contact with the fish so soon as caught; and all through the reports the fact is prominently set forth that a good article will always find a ready market, especially if that article be carefully selected, well-cured herring.

Mr. Reid, Vice-Consul at Stettin, from whom we received much kindness and information, and who is largely engaged in the herring trade himself, in his report to Lord Salisbury, in 1888, says:—

"The increase of the demand for Scotch cured herrings can best be promoted by good quality and improved selections, and particularly in the 'selection of the fish,' which should be made suitable for the requirements of the different customers. That the various kinds and selections of herrings imported at Stettin are so numerous, that it is impossible to explain graphically and exhaustively what is required, and suggests that the best way of obtaining information on the subject, would be that one or two practical and technical members or officers of the Fishery Board, were afforded the opportunity of studying the requirements of the trade at Stettin, which is the largest market for cured herrings of all kinds."

The Scotch sent to Holland for skilled coopers to teach them the art of curing herring. The Swedes and the Norwegians, respectively, sent to Scotland for trained coopers to teach them the same thing. There can be nothing derogatory in Canada doing likewise.

REMEDIAL MEASURES.

From the evidence before us, as well as from our own personal knowledge of facts relating thereto, we consider the herring industry of the Dominion of Canada to be at present in an unsatisfactory condition. We consider that very great and important changes in nearly all present methods of cure are imperatively necessary.

These changes, calculated to benefit the whole trade, cannot injure any, but must inevitably and materially improve the position of all concerned, the fisherman, the merchant and the consumer-while promoting and consolidating an important branch of the commerce of the Dominion. Therefore, the co-operation of all concerned will be required in order to bring about effectually and economically the necessary reform in this important industry. The country has done much already for the promotion of the agricultural, and commercial and the manufacturing interests, and there can be no doubt that the country, through the Legislature and the Government, will do whatever may be necessary to place the herring fishery of the Maritime Provinces upon an improved, permanent and satisfactory basis.

We consider the Scotch system of treating herring, as an article of commerce, to be as perfect as any system can be when honestly carried out in all its integrity, and that improvements in the herring industry of Canada can safely be made after the Scotch model, so far as our somewhat different circumstances may permit.

In one most important respect the Scotch fishermen have an immense advantage over the Canadian fisherman, and that is in having all the curing and packing of herrings performed by a distinct and independent class of merchants known as

fish curers. We have seen that the herring industry of Scotland never amounted to anything, never prospered, until an enterprising and energetic body of men came forward and assumed the position of fish curers, taking that part of the business entirely out of the hands of the fishermen, to the great relief of the latter, and the promotion of this important business. In order, therefore, to place this industry in Canada upon a satisfactory and permanent basis, we are of opinion:

1 That while some slight degree of improvement in the details of curing and packing herrings may be at once attained by changes in the present methods, yet no real permanent improvement can take place nor can the herring industry in Canada be placed upon a satisfactory commercial basis, until the fisherman ceases to be his own fish curer, and until the business of curing is taken in hand by a class of merchant fish curers, as in Scotland men of energy, business experience and capital, with all the necessary appliances to carry on the business on fixed principles and in accordance with such regulations as may be promulgated for the benefit of the trade from time to time.

In Scotland nearly all the curers devote their whole time to the supervision of their own curing operations. In former times if a fish curer did not so superintend his own curing business he made arrangements, as Mr. Gordon, of Pictou, in his reply to question No. 4, 1869, states with a master cooper to furnish the barrels, and generally to superintend the cure and putting up, guaranteeing that the same would pass the Crown brand; or he hired journeymen coopers and a foreman, laid in materials for the manufacture of barrels, and the foreman attended to the curing for the market. This was the method, to a great extent in Scotland 55 years ago, and to some extent still.

Mr. Gordon also very truly says, as the result of his own experience, and as we know to be the case, that when a fisherman cures his own fish it is done with the least possible labor and cost, and once they pass into the hands of the merchant or trader, paying up so much of his indebtedness to the former, he feels no more interest in the matter; but it is different with the merchant or curer; his capital, his credit and his good name are at stake, and unless his fish are properly cured he will be the loser. Thus the strongest of all motives, self interest, would induce him to cure and put up for market an article calculated to render a return for his outlay.

2 (*a.*) That there should be a chief fishery officer, inspector or superintendent, having jurisdiction, under the Department, over all matters of detail pertaining to the herring fishing industry in all the Maritime Provinces, whose business it should be, in association with one or more of the most experienced and most intelligent officers in each Province, to arrange a general classification of herring, and a graded branding standard, as well as an unbrandable grade for the Dominion; having due regard to any special kind of herring peculiar to any one Province or locality; the object being to secure, as nearly as possible, a general Dominion standard on the same lines as the graded standard of Scotland, as nearly as circumstances will permit. Such an arrangement providing such officer we consider as necessary as the establishment of a merchant fish-curing class, in order to attain to anything like perfection of system and permanent improvement. While such an officer would instruct the local officers in technical as well as practical knowledge in relation to fish and fisheries, they would communicate to him all necessary local information having reference to his position and the duties of his office.

To such an officer also, in the first instance, at least might be referred for settlement all disputes arising within his jurisdiction having reference to the herring industry from the catch to the brand. In short, his whole time would be given to the task of re-organizing the entire business, under the law and the regulations of the Department, and of securing an improved and uniform system in all the Provinces as speedily, as economically and as effectually as possible.

(*b.*) That there should be imported and established in each sea-board county, where the importance of the herring fishing may so warrant, a thoroughly trained Scotch herring cooper, of long experience in the herring curing business, who should act as head inspector for his district, with power, after instructions, to appoint his

deputies, and who should be responsible for their work as well as his own, in inspecting and branding—whose duty it should further be, within his district, to exercise a general supervision at all points where necessary, over the curing of herring, the proper classification, selection, packing, inspecting and branding of herring, to examine the barrels, and to instruct all herring coopers in his district in relation to the mechanical and other duties devolving upon them, and pertaining to their occupation—such county inspectors to interfere in no way with the existing staff of fishery inspectors and overseers.

(*c.*) That there should be imported from Scotland, for each such county, one crew of expert herring-gutting girls, whose business it should be to go from station to station, teaching all concerned, willing to learn the art of gutting, selecting, classifying, curing and packing herrings, and re-filling barrels preparatory to inspection, as practised in Scotland.

This step we consider most important, not merely as to the modes, but also as to the expedition with which the work can be done, especially when we learn from a reliable source that in some places in New Brunswick it took four men eight days to put up, in a very indifferent way, 200 barrels; and four men over four weeks to put up the same quantity in good order and style—whereas, as already stated, an expert crew of three Scotch gutting girls, can gut and pack 80 Scotch barrels, equal to 100 Canadian barrels of herring, in one long summer day. If the women at or near the several herring fishing stations in the Dominion, and the young lads on the herring schooners were taught, so that a crew of three of these could gut, cure and pack even 50 or 60 barrels a day, or more, what a good work would be done, and what a saving of time and money would be effected.

In this way not only would the women at the large stations be taught, but also the women in small hamlets and out-of-the-way places along the coasts, where the catch is so small as not to induce merchant curers to establish stations, fishermen, their wives and daughters, could be instructed how to gut, assort, cure and put up herring so as to claim the brand for home consumption. Such an arrangement would be of incalulable benefit to isolated fishermen on many parts of the coast. These gutting girls could thoroughly educate all the women on the coasts in the art of gutting and packing in two or three years, and might, if the Department saw fit, be allowed to work for some of the large curers, when necessary, on such terms as might be decided upon, and so reducing expenses.

THE BARREL.

3. That the present Canadian barrel, being too weak to stand the rough handling to which it is exposed on the railways in transportation, should be greatly improved. We think the present capacity of the barrel should be retained. That it should contain not less than 200lbs. of herrings, exclusive of salt; that it should be made of stronger material; that the staves should be of hardwood wherever possible, and that if spruce is permitted to be used, the stave should be thicker and stronger than the present stave. Fir and pine should be prohibited. The rule in Scotland has been that the barrel might be made of any kind of wood, fir excepted. Mr. Gordon, of Pictou, in his answer to question 4, 1869, says:—"Hardwood is calculated to retain the pickle without souring it." It seems very probable that a fir or pine barrel may "sour" fish or other animal food packed in it for the first time. If a new pine barrel or cask be filled full of pure water, and covered up, and allowed to stand for some weeks, there will be formed in the water a pretty firm gelatinous substance, which, if allowed to remain for some time, becomes very offensive, as has been the case often in regard to pipes made of tamarac and pine, used for conveying water underground, where frequently pipes with a three-inch bore have been nearly clogged up from end to end with this offensive matter. If cleaned out, however, and the pipes relaid, the gelatinous substance will not again form.

The Scotch rule also enjoined that the heads, or ends, must be in pieces not exceeding 8 inches in breadth, and that when the herrings were barrelled up, the

head must be supplied with a flag or bulrush round the edges, but that tow or flax might be used as a substitute.

The rules further required that if herrings were intended for home consumption or exportation to any place in Europe, the barrels to be full bound with hoops at one end and generally three at the bilge, and four at the top. But if the herrings were intended for exportation to places out of Europe, the barrels must be full bound at both ends, and have, besides, two iron hoops, one at each end.

It is universally conceded that oak barrels are the best of all, and where procurable, the Dutch use no other kind. The present barrel, we think, after sufficient notice, should be prohibited. We are of opinion that a little more bilge would add to the strength of the barrel. The hoops should be of better quality than they are now, and there should be more of them; and all barrels intended for transportation beyond the province where the fish are put up, should have at least one iron hoop at the top, and should the barrel be of spruce or Norway larch, then in addition to a thicker stave there should be an iron hoop at each end. If, however, hardwood staves can be procured in sufficient quantity, we think that softwood barrels should not be allowed. The knot of the hoop should be longer than it is in the case of the present hoop, to prevent it suddenly springing off. There should be in the side of the barrel, above the bottom hoops, 15 or 16 inches from bottom, a bunghole about one inch in diameter, with well-fitting bung, and the usual rule as to crossing the heads should be observed. The new standard barrel, when decided upon, should be made a legal standard by Act of Parliament, as is intended to be done in Britain next session of the Imperial Parliament. There should also be a legalized half barrel built of the same material, and in proportion to the size of material used in the large barrels.

SMALL PACKAGES.

4. We are of opinion that in addition to the barrel and half barrel, there should be established a grade of small packages in which to put up re-packed herrings, after the manner of the Dutch and Germans. That these packages or kegs should be integral parts of the large barrels, say one-fourth, one-eighth and one-tenth parts of the full sized barrels. These kegs have been already described. We believe that kegs in every way suitable for this purpose may be procured in Canada. A gentleman largely interested in the sugar refining business told us that he gets a very neat small keg or kit, for holding syrup, made in Ontario, at reasonable prices, and he considers that the small herring keg can be made here as well and nearly as cheap as in Holland. If so, then a very great step is assured towards the establishment of what we believe to be a most important and profitable branch of the herring industry of the Dominion.

We are of opinion that the very first movement towards improvement in this industry, should be in the direction of improving the herring barrel and consequent discouragement to the manufacture of the present barrel.

As already stated, there can be no doubt that a very large business can be done in the small package line if properly gone into and taken hold of with energy and in a business manner. Canada should be able to largely supply the demand on this Continent for herring put up in this way.

CURING.

5. That next in importance to the catching of the herring, is the proper curing of them. This process commences in having the salt brought into contact with the herring, as soon as caught, and if it could be done at sea as soon as the herring come out of the water, so much the better and so much more thorough the cure. All the printed evidence, all the experience of the Dutch, the Yarmouth fishermen and others, and all that we heard on the subject, goes to confirm this. If attention to this preliminary salting be so necessary, and so salutary in results in Britain, how much more necessary is it in the Maritime Provinces, where the temperature in summer is so much higher. In order, therefore, to preserve the herring from incipient taint, and to retain

all the delicate flavour and natural excellence of the fish, it is absolutely necessary that at the earliest possible moment, the curing process shall commence, and that the herring be scrupulously shaded and sheltered, from the damaging effects of the sun—throughout all the stages of gutting, curing, packing, &c. This is most important because injury caused to the herring by exposure to the sun can never be remedied. The injury sustained by herring in this way, is beyond the power of man to remedy. Inordinate quantities of salt, soaking and washing in water may cover up the damage done and prevent further taint, but the lost excellence of the fish can never be restored. There can be no doubt that the great bulk of the injury sustained by the herring of the Maritime Provinces is caused in this way—and if this can be avoided in the future by the adoption of some feasible inexpensive measures to protect the herring from the sun, from the time of catch to the time of shipment, a great point will be gained and much done to redeem the character of Canadian herrings. The next step in the curing process is the "roosing" of the herring after gutting, and the proper salting of the fish when being packed.

Should it happen that the preliminary salting cannot be effected before delivery, then the herring should be well sprinkled with salt during delivery.

The Western consumer is about tired of eating herrings, out of which all excellence has been extracted by soaking in water and over-salting, and if these western markets are to be retained the quality of the fish must be improved, and that at once.

GUTTING.

6. That we consider the Scotch mode of gutting to be as good as any for all commercial purposes, and all that can be desired when properly carried out, and the curing properly attended to. In Scotland the early herrings are very fat, and are not branded. These are the herrings which Mr. Mitchell says are in such request by the wealthy families of Russia, and they are hurried over to Stettin for immediate sale and use. A fish-curer told us that some of these herrings sold in June, 1889, for £10 sterling ($50) per barrel. There is no material difference in the mode of curing these herrings. In Canada, however, it appears, that in the case of fat herrings caught in July and August, special treatment has been found necessary. Mr. Gordon, of Pictou, who has had much experience in the herring business in Scotland and in Nova Scotia, in his answer to question No. 4, submitted in 1869, says:—

"I beg to advert to the only additional detail, which, in my experience, I have discovered as applicable to the perfect cure of herrings in the months of July and August, on the coasts of Nova Scotia. Having engaged on my own account in a sailing vessel trading on the coast of Nova Scotia and Cape Breton, and provided with salt and barrels, I preferred purchasing the herrings in their green state, and cured a few barrels after the Scottish manner. On examination of the fish after being struck, I discovered an incipient taint along the backbone of the fish, which would increase with age, so as to render them unsuitable for a distant market in a tropical climate. I came to the conclusion that the taint was owing to excess of temperature here over that common on the Scottish coasts, and besides the herrings are larger and fatter in the months of July and August on this coast, than on the coast of Scotland. Thereafter, I ripped, with a sharp knife, the belly of the fish, and filled the belly with salt, and immediately packed them in tight barrels, with one bushel of Liverpool salt to each barrel, and protected the barrels from sun and rain."

Another gentleman, replying to the same question, says:—"Herrings should be all opened with a knife and filled with salt, otherwise they cannot be properly cured." This latter statement, as applying to all herrings, seems rather general. Mr. Gordon only recommends this treatment in the case of herrings caught in July and August on the coast of Nova Scotia, when the fish are very fat. Even then it can hardly be possible that the belly of every herring need be filled with salt. To fill a herring with salt must effectually destroy the flavour of the herring and leave it as innutritious as a piece of basswood.

It may be, however, that some of these July and August herrings may be utilized for the manufacture of kippered herrings. In October, 1889, a very fine and well-flavoured kipper, said to come from Baltimore, U. S., was for sale in Toronto at high prices. It was very fat. The "Ciscoes" of Lake Ontario are very fat, fully one-fourth or one-third oil, yet they make most delicious kippers. are in great demand and sell at high prices. The "Ciscoe" is a herring and is taken in deep water in the fall of the year. Many of them are put up as bloaters.

All this shows how necessary it is that some one or more competent men, experts, technically and practically in all pertaining to the classification of herring, should fully investigate all the different kinds of herrings on our Atlantic coasts, and decide upon the different modes of cure adapted to special kinds of herrings, in special localities, and at special seasons of the year.

ROUND, OR UNGUTTED HERRINGS.

7. That between the mode above recommended by Mr. Gordon, and the mode of putting up round, or ungutted herrings, there must exist many degrees of difference. We have already referred to ungutted herring, and to the fact that the Scotch curers strongly disapprove of packing ungutted herring, and expressed their surprise that any people of the present day would waste salt and time for such a purpose. In the case of the best packed herrings, if a stave breaks, and the brine runs off the herrings undergo very serious deterioration, but in the case of ungutted herrings, under similar circumstances, total destruction of the contents of the barrel would take place, from the setting free of the elements of decomposition contained in the ungutted herring, theretofore held in check by the preservative qualities of the salt and pickle, round, or ungutted herrings put on the market in any quantity can only do harm by damaging the character of the whole catch of any given locality. We therefore consider that the putting up of all such herring for commercial purposes, should be strictly prohibited.

PICKLED HERRINGS.

8. Having already described the Scottish method of curing and packing herrings, and having expressed our opinion of that system as being entirely adapted to the curing of herrings on our Atlantic coasts, we feel convinced that its general adoption and its legal enforcement would, in a very short time give Canadian herrings a very high standard and character in the markets in which they are now held in very low estimation. We have given this subject our best consideration, and so convinced are we of the vital importance of proper curing, and protection from sun and rain, that we would again urge that every diligence and care be exercised in these respects, as well as to the quality, selection and separation of the fish in the first instance. It is most desirable that the fish, especially during the hot season should be handled and shifted as little as possible, as every time they are turned over they part with a portion of the scales, and become softer and softer, more flabby and less ready to absorb the salt.

In the matter of packing pickled herrings for the purpose of repacking into small packages, very great care should be taken to have the fish of the best quality in every respect. In Holland and Scotland, as we have shewn, "fulls" and "crown fulls," the highest brands, are taken for this purpose. The repacking should be done well and neatly and the kegs, as already stated, filled up with the brine from the large barrel out of which the fish has been taken. A slight sprinkling of salt on the bottom of the keg and the top tier of the herring should be given.

This branch of the business is worthy of the special consideration and effort of all who may engage in the curing of herring. We know that in western Ontario there is now a demand for herring put up in small packages, especially in the rural districts. It can readily be seen that in a country where there is so much beef and pork, not many families will purchase whole barrels of herrings, while many would gladly purchase herrings in half barrels, quarter barrels, and the smaller packages.

If the Dutch and Germans can afford to pay freight and shipping charges on herrings from Scotland to Holland and Germany; unpack and repack into small packages, pay freight and shipping charges to New York, and sell these herrings in Quebec and Ontario, with a good margin of profit, surely the herring traders of the Maritime Provinces should be able to supply herrings in this shape as good in quality at lower prices, and with a better margin of profit. By supplying a proper article this branch of the trade can be increased immeasurably both in the United States, the Western States especially, and in the inland provinces of the Dominion.

BLOATERS.

9. We have already also fully described the mode of curing bloaters. Great care should be taken in selecting the fish. The herring may be pretty fat, but should not be too lean, and all unsound and inferior fish should be carefully picked out. The salting and smoking must be carefully and judiciously done. We believe that a large and profitable business can be done in bloaters from the Maritime Provinces, if proper arrangements can be made for curing, packing, transportation, distribution and sale throughout the country. By the use of refrigerator cars on express trains at stated periods, the mildest kind of bloater manufactured to keep without ice for three or four days, can easily be delivered at Toronto and all intermediate points in time for sale and consumption—and a bloater intended to keep without ice for seven or eight days can be delivered all over Ontario, while a bloater intended for use in ten or twenty days, can be distributed in Winnipeg and all along the lines of railway in Manitoba and the North-West. In England, as we have stated, almost everybody eats bloaters. This is a most desirable mode of curing herrings, retaining as it does all the delicate flavour and natural juices of the fish—and these increased by the peculiar mode of treatment. In all the towns and villages bordering on the railways from Halifax to Calgary, a great demand for bloaters can be created by the exercise of intelligence, energy and enterprise well directed, and the production of a good article. The business should commence on a somewhat small scale and gradually extend, as the demand increases, as the business is better understood, and as the machinery for distribution and sale throughout the Dominion becomes perfected. One point to be observed is not to force this article upon the market, but first to ascertain through the larger dealers as nearly as possible what the demand may be; to meet that and no more, but to meet it as it gradually increases. In this way there will be no surplus stock left over, and therefore no temptation to sell an unsound article to the injury of the trade. In England we were told by retail dealers that they very seldom lost any perishable fish, because they had their regular customers, and received only from the supply dealers such quantities of bloaters as they knew their customers would at once require.

We consider the neat light box in which bloaters for immediate use are put up in Britain, containing 50 herrings, a convenient and desirable size. Small packages are easier handled and easier disposed of, and do the fish more justice. This is a branch of the business in which by close observation and good judgment, perfection can be soon attained. As stated elsewhere, the degree of salt to be given must be regulated according to the length of time the bloater is intended to keep, and the smoking should be graduated from the pure white color of the herring to a slight yellow color. The smoke from the sawdust and very fine chips of birch is preferred, as it makes the sweetest bloater and increases the delicious flavour of the fish. Great care should be taken to keep down the heat in the smoke house. The fish should not be cooked there. They should be thoroughly cooled before being packed in the boxes

KIPPERED HERRING.

The mode of manufacturing and putting up kippered herring for the market has been fully explained already. It involves more labor, and more exact treatment, consequently fish put up in this way sell at a slightly higher price than bloaters. Although the bloaters are an excellent fish, and used in very large quantities in Britain, the kippers are even more delicious eating, and are in great demand, especi-

ally in the cities and large towns. Immense quantities of them are manufactured in England and Scotland. As in the case of bloaters, the proper class of herring must be carefully selected, and all unsound, sickly and immature and unsuitable fish excluded. We have already stated how very quickly herring can be kippered, prepared for the market, and shipped on board the cars, all in eight or nine hours from the delivery of the herring from the boats. As in the case of bloaters, so kippers are made to keep for shorter or longer periods, the graduation depending on the quality of salt and smoke used. The trade in kippers, by judicious action, can be increased to very large proportions in the Dominion. By judicious management and careful distribution, a large and remunerative trade in kippers can be established from Halifax westward, a trade, with that in bloaters, of the utmost benefit to the fishermen, dealers and consumers of the Dominion. When properly developed, the trade in kippers will use up a large quantity of herrings annually. It may be found expedient to import some kipper cleaning girls to teach expertly the art of splitting and cleaning herring, for the manufacture of kippers.

RED HERRINGS.

10. The modes of manufacturing red herring in Britain have been fully described. We have also shown on good authority how this branch of the herring industry has been seriously injured in Britain by defective selection, imperfect curing and dishonest packing, and that this condition of things arose because there existed in Britain no law for the supervision by the fishery officers, and inspection of red herrings. On this subject Mr. Mitchell says :—"We have in another part of this work endeavored to explain the cause of the diminution of the quantity of red herrings, which in former years was large in some of the towns. Now, it is very well known, that in the curing process of red herrings, the assortment of the different kinds, the size of the barrel, are not in any way subjected to the inspection of the fishery officer, there being no law yet applicable to the curing of red herrings; the trade in most places has, therefore, very much decreased.

"We have seen the red herrings, sold by the principal curers, examined, and found the barrels filled with a mixed variety of inferior fish, the barrels two small, and the herrings improperly packed; so that orders to purchase for foreign countries have quite diminished, and now the curers at the principal port, Yarmouth, have to ship the greater part to the Mediterranean for sale, and often lose considerably by such shipments. We consider that if the red herring cure were placed by the Fishery Board under proper legislation, the quantity required for consumption abroad would be largely increased. One inferior cargo sent by an inferior curer to a foreign port, will tend to destroy the whole trade."

We have already referred to what was told us as to a consignment of inferior smoked herrings from Nova Scotia to Britain, having seriously checked an important trade for some years to come. We are of opinion that a good red herring trade may be established in the Dominion by careful selection of the fish, the exercise of a wise discretion and good judgment in salting, smoking and packing, and, in due time, the enactment of a judicious law of inspection. We think that in the inland provinces, and in the Western States, an extensive market will be found for red herring, as well as for herring put up in any other way.

The herring of the Maritime Provinces, at certain seasons of the year, are well adapted to the manufacture of red herring. The fish should not be too fat, neither too lean. We think that red herrings should be put up, as in Belgium, in hampers or slat made, open boxes, containing 100, 150 and 200 lbs. each, or such other size as convenience and demand may indicate. Careful inspection and branding would ensure greater care in curing, and greater uniformity in quality. Very large quantities of red herring are sold in London, England, and there can be no doubt, that under proper regulations, the red herring industry can be so greatly increased in Canada, as also to utilize very large quantities of herring.

CANNING OF HERRING.

11. Through a letter of introduction procured for us by the High Commissioner in London, and accompanied by the local Fishery Officer, we were courteously shown through a cannery for herrings in Scotland, where some 400 hands are employed. This establishment uses up an immense quantity of herring, all of the very best quality, and of medium or rather small size. The greatest care is exercised if the selection of these fish. They are put up in one pound tins. Herrings put up in this way are very delicious, many people preferring them to canned salmon. The girls who clean these herrings and put them up, do their work very rapidly. The herring canned at this establishment are not for sale in Britain. They are all exported to the East Indies, Australia, and the Cape of Good Hope. It is gratifying to know that a herring suitable for canning is found on the coast of Cape Breton, and that a commencement has already been made there in the canning line. No doubt herring suitable for this branch of the herring industry will be found on other parts of the Atlantic coast, and that canneries will be established in other places. After we had gone over the establishment in question, we were treated to the contents of a can of herring, and can truly testify that we never before tasted anything in the herring line so delicious and fine flavored. The herring were cooked in the tins by steam, thus preserving and concentrating all the natural and delicate flavor and juices of the fish.

By putting up herrings in the different modes mentioned, new demands for such fish would be created, and the parties interested in the trade could realize largely on bloaters, kippers, canned herring, and red herring, all throughout the fishing season, instead of waiting for returns until near the close of the season, a matter of great consequence to all concerned.

INSPECTION AND THE BRAND.

12. In the foregoing pages we have quoted largely from the best authorities and have said much ourselves on the subject of inspection and the brand, which is, so to speak, the seal of inspection. The only hope of establishing the herring fishing industry of the Maritime Provinces of the Dominion upon a sound and permanent basis, as one of the great commercial interests of the country, rests on the adoption of a rigid system of inspection, and the establishment of a fixed standard for herrings. All other measures that may be adopted with a view to accomplishing the improvements necessary in regard to our fisheries industry should be carried out as being merely preliminary to the establishment of a judicious system of inspection as the ultimate aim, for without inspection all efforts to improve the herring industry will amount to very little. We all know of how much benefit to the farmers, the grain dealers and the millers of the Dominion have been the establishment of the present grain standards and grading of grain. A thorough knowledge of the grain trade, experience and skill in the handling of grain, consideration towards the farmer and the grain dealer, co-operation and perseverance have been necessary to bring our grain standards to their present state of perfection. So in like manner the co-operation, the consideration, the intelligence, the patriotism, the technical skill and the practical knowledge of all concerned or interested in the development of the herring fisheries of the Dominion are required in order to bring about the necessary reforms in that industry, and finally to establish the necessary grades and standards for herring, and a wise and judicious system of supervision, inspection and branding.

From the answers made to question No. 5, sent out by the Committee of the House of Commons of Canada in 1869, it will be seen that the majority of those who replied are not only in favor of inspection but also ask that it should be compulsory. They all feel the very great importance of this matter, looking upon it as the only means of resuscitating this drooping industry and placing it upon a prosperous, satisfactory and enduring foundation. From those answers and all the other evidence before us it is clear that there is at present no standard, no system, no uniformity in any degree as to the modes of treating or curing herring, but that every man does so in his own way—indifferent to results if only he can dispose of

his fish. It also appears from these answers that some of the merchants dealing in herring have been indifferent as to the quality of the fish they accept from the fishermen, the same, without inspection, being transferred from hand to hand until they finally reach the hands of the retail dealer, who has to face the consumer. And the only safety the consumer now has is in the determination of many to purchase no more herrings until the quality shall be improved. It is not creditable to the trade that, as stated in one of these answers, consignments of herrings should be landed at Quebec fit only for manure, or, as stated in another answer, that wholesale dealers in Toronto should have to throw large quantities of Lower Province herrings into Lake Ontario. Such transactions are destructive to the trade and most damaging to the fisherman, because they destroy all confidence in the product of his hard labor and check all demand for a staple and healthy article of food, which would otherwise be in request, more or less, by almost every family in the Dominion and by thousands in the Western States of America.

Some of those answers reveal a difference of opinion as to when and where the inspection should take place. We consider that it should take place where the fish are caught and before removal, under regulations such as govern the officers of the Fishery Board of Scotland.

We think that the period for seasoning, maturing or "pining" the herring before inspection and branding should be fifteen clear days between the day of refilling and the day of inspection, being the time originally allowed in Scotland. As we have seen, however, under a pressure of commercial exigency, the time was changed, and by the Commissioners under legislative sanction, reduced to ten days, so that the fish curers, or some of them, might be able to realize on Bills of Lading five days earlier than under the old arrangement.

We think the same exigency could not arise in the case of our own fish merchants, the circumstances being quite different, so that a few days more or less in the matter of realizing on the fish would not put our dealers to any inconvenience. We think that the results of the ten day rule, this year especially, in consequence of the inferior quality of a large portion of the catch in Scotland, have been very unfortunate, and have tended to bring the brand into disrepute, in the manner indicated by the "Glasgow Herald," already quoted. Our own opinion, as already stated, is that from exposure to the sun or rain, or from other injurious conducing causes, incipient deterioration may take place and yet not be apparent within the ten days, while such might unmistakeably manifest itself in fifteen days. We are therefore in favor of fifteen clear days between refilling and inspection.

To hold that the inspection and branding should be done by the purchaser, and after the herrings have been landed at a distant port, would be unreasonable and unbusiness-like, being uncertain, because in such case the inspection might never take place, and the old condition of things would still obtain. But the herring should be inspected at the port of catch and cure and by the inspector under whose supervision the fish have been put up. To hold otherwise would, we fear, indicate indifference to the true interests of the fisherman. Herring fishing is a precarious business at best. It is doubly so where the industry is not organized, and based on strict commercial principles. Many fishermen are never able to get out of debt. If herring are worth catching they are worth curing, and if worth curing at all they are worth curing well, and upon the most approved methods, so that through the supply of a standard article the merchant may have such a demand for his fish as to establish the relations between himself and the fisherman on a sure and permanent basis, and thus enable the fisherman to reap to the fullest extent the legitimate reward of his industry.

In the meantime there is an educational work to do, the work of instructing the fishermen as to the changes and improvements necessary and preliminary to the introduction and establishment of the brand.

Another important point in connection with the brand, claims our attention. It is surmised and said that considerable quantities of pickled herring, inferior and badly put up, are annually imported into Canada and, in many instances sold as

Canadian herrings. Now it would only be fair and just to our own fishermen, that no pickled herring inferior to the herring of the Dominion, either as to gutting, cure, packing or barrel, shall be allowed to come into the country, and that when inspection and the brand shall have been established no herring of inferior grades shall be imported into the Dominion.

There can be no doubt that much of the feeling which has been manifested in Britain against the brand, has arisen from the imposition of the branding fee of 4d. sterling per barrel. The imposition of that fee was a compromise. The herring industry is of national importance, we therefore think the brand, when adopted, should be free to all using it, and that for a time at least, it should be compulsory.

MOVEMENTS OF THE HERRING.

13. The migratory movements and habits of the herring have not, so far as we know, been much observed or studied in Canada, especially as to the deep waters of the Atlantic coast. We have no reason to conclude that the movements and habits of the herring on this side the Atlantic differ materially from those of the same fish on the coasts of Europe. If, then, the habits of this fish are the same on both sides the Atlantic, there must be great migratory shoals of herrings in deep water off our coasts that are never seen or touched or fished. All that appears to be known in this way is merely as to the appearance of small bodies of herrings mooring close in shore and in the St. Lawrence.

Mr. Mitchell, from whose book we have quoted so much, has very little to say about the movement of herrings on the American coast of the Atlantic. He quotes as follows:—

"In the month of January the herring came upon the coast of Carolina, and are said to proceed northwards."

"They visit the coast of Virginia in February and all the bays and rivers as far north as the Bay of Fundy, and they continue spawning until the month of May, and in some places may be caught until July."

AMERICAN TRANS., VOL. 2, PAGE 237.

"Nova Scotia—A small and very fat herring approach the shores of Nova Scotia from the Bay of Fundy in the month of May, and about the end of May enter the Annapolis Basin and on the shore of Clements are caught in considerable quantities."

"South Coast—Another herring of a large size and full of spawn arrive on the south coast of Nova Scotia in May, but they are lean and not much esteemed, although taken in considerable quantities."

"West Coast—In Chedebucto Bay, and particularly in Crow Harbor, and near Fox Island, a considerable fishery takes place in the months of Autumn. These herring are of good and excellent quality."

McGregor's British America, Vol. 2, pp. 171–172.

It would be interesting and perhaps profitable to know from what directions these several bodies of herrings, so different in quality, come. It is hardly probable that the shoals of herring which make their annual appearance off the coast of Carolina in January are the same fish met with in the Bay of Fundy and elsewhere in May, or that the small, fat herring coming to the shores of Nova Scotia from the Bay of Fundy, and the large, lean herring arriving on the south coast of Nova Scotia in the same month can come from the same waters or belong to the same moving shoals. Is it not more likely that the movement of herring in January off Carolina may be but the commencement of a general movement, in *echelon*, of the great army of herrings from the depths of the Atlantic, extending northward, and approaching the shore as the season advances? And yet this would not account for the great difference in quality, above referred to.

We are of opinion that it is very important, and in the interest of all concerned in the herring industry of the Atlantic coast, that the movements and habits of the

herring in deep water should be closly observed and studied; and that special attention to this matter might be given by the officers and men of the Government cruisers, and of the local shipping engaged in the fisheries of the Atlantic coast, as much information of a useful character, bearing on the future development of the herring fishery, may be procured in this way.

Such knowledge would have an important bearing upon the subject of the protection of the herring fisheries; the question of spawn; the operations of trawlers; the take of fish under present circumstances; modes of fishing and the development of the

DEEP SEA OR DRIFT NET HERRING FISHERY.

14. We have already described the mode of herring fishing on the east and west coasts of Scotland, with the exception of the lochs and bays, known as the deep sea, or drift net herring. It is difficult to believe that this mode of fishing cannot be prosecuted with success on many parts of the coasts of Nova Scotia, New Brunswick and Prince Edward Island. The establishment of a deep sea, or drift net fishery on our Atlantic coast is a matter of the utmost importance to our fishermen, seeing that all the evidence on the subject establishes the fact that all kinds of fish are gradually receding from the shore, and that the inshore fisheries are yearly becoming of less and less value, and that unless a deep sea fishery of herring can be established, the position of the inshore fishermen will become very serious and critical indeed.

We are glad to observe that some scraps of valuable information, bearing on this matter, are at hand, and to be found in the reports of some of the Fishery Inspectors and Overseers of the Maritime Provinces for 1887. Overseer Sellon, of Liverpool, Nova Scotia, in his report says:—

"Herring and mackerel were plenty outside, but did not come into the harbours, and consequently boat fishing was a comparative failure."

Overseer McGill of Shelburne, N. S. says:—

"Herring did not enter the harbour as usual, and, as a result, the fishery was a failure."

Overseer McQuarrie of Sherbrooke, N. S., says:—

"Herring and cod are the main dependence of fishermen on this division, and the catch of these fish was rather below the average. Late in the season, large quantities of herring appeared in some places, and remained a few days; but the quantity taken was confined to a few. Of late years both cod and herring appear to be receding from the shore, and small boats have been unsuccessful in securing large fares. Bait, which was formerly caught in abundance inshore, has of late to be sought after at considerable distances out, in deep water."

From the report of Inspector Duvar, of Alberton P. E. I., for 1887, we make the following extracts:—

"Actual proof has this year been obtained, of the correctness of an impression which I have frequently expressed in reports and otherwise, that the coasts of Prince Edward Island might be made the seat of an extensive fall fishery."

"Along the north coast, especially off King's County, herrings were seen this fall and some thousands of barrels were taken, equal to Labrador. According to appearance this fishery has only to be pursued with energy to attain large proportions . . . . Were this fishery established, its ramifications would extend far. Fishermen would have employment after mackerel left."

"The hands now engaged in lobster packing, would find equally profitable employment in the various processes of the herring fishery, as is the case on the coasts of Scotland. Teamsters, and other persons on shore, would find no falling off in their employment, while coopers, &c. would see their business largely increase. With an increasing energy this business would organize itself . . . . I am very sanguine as to the success of a fall herring fishery, after a beginning has been made, and in conversation with several firms interested in the fisheries, there seems to be a growing belief, that the herring fishing will, some day, be of much more importance than the

lobster fishery ever was . . . . To properly pursue the herring fishery drift nets and a better class of boats are necessary. Were such a permanent herring fishery developed, it would be mainly, a Canadian industry, with little to fear for competition with the United States. Although I have no great faith in the principle of fishing bounties, it might be worthy of consideration whether a special bonus might not be offered for a limited term for the development of the fall herring fishery in the gulf."

These words of Mr. Duvar's are in harmony with the opinions we formed on this subject, from our observation of the herring fishery in Scotland.

While, from certain favorable circumstances, referred to by Mr. Duvar, Prince Edward Island would be a good locality in which to commence experiments in drift net fishing, we think that experiments should not be confined to the coast of that Island, although there seems little reason to doubt that such a fishery could be successfully established there. We think that experiments with a view to deep sea drift net fishing should be made along the entire Atlantic coast of the Dominion. We think that such experiments and the preliminary expense would be more than any combination of our fishermen could bear, and more than any syndicate of fish merchants would be disposed to furnish, especially in a branch of the fishing business, in which, when once developed, everybody could participate. The subject is one of great national importance, and could only be successfully undertaken and successfully carried out by Parliament and the Government, through the Department. The Governments of the herring fishing nations of Europe, Britain, Holland, Norway, Sweden and France have spent large sums of money in developing and encouraging the herring fishery in their respective countries; and there can be no doubt that Canada will do what may be necessary in this matter. To this end we are of opinion that at least six boats, being two for each Province, of the class and build of the Wick boat, with modifications, bringing the boat more into harmony with American lines, and rendering the boat more suitable for our coasts in the prosecution of drift net fishing, should be procured by the general Government, together with the necessary number of nets, a drift of 40 or 50 to each boat.

That 4 men out of the 7 constituting a crew, one of whom should be skipper for each boat, should be imported, of the best men to be had on the east coast of Scotland—with 3 local men additional for each boat, picked men, supplied from among the fishermen of the respective Provinces, practical herring fishermen thoroughly acquainted with the local tides and currents and the harbors on the coasts. As fast as these local men became instructed in the system of deep sea drift net fishing, they could retire, leaving their places to be filled by others ready to avail themselves of the advantages of this educational process.

Scotland imported experienced fishermen from Holland, in 1750, to teach her fishermen the proper modes of fishing herring. Boats can be modelled and built, and nets made by our own people. The whole amount necessary to test and develop drift net fishing would not be great, while the results of the experiments, if successful, would be of the greatest importance not only to the fishermen individually, and the Provinces locally, but to the trade, commerce and national wealth of the Dominion at large.

BOUNTIES.

15. In England and Scotland, in the infancy of the herring fishing industry, large sums of money were expended by the Government in the shape of bounties; by joint stock companies, and by private individuals, for the advancement and promotion of the fisheries, but it was not until Parliament took the matter up, as we have already seen, by wise legislation and the introduction of a judicious system of supervision and encouragement, established this industry upon sound commercial foundations, that any real progress in the development of the fisheries was made. The bounty system then gradually fell into disuse. The bounty system is not so much in favour now as it was then. In Scotland, at present, the cry of the herring

fishermen is for more harbour accommodation. That is the shape in which they would like to have Government aid.

One of the questions (No. 9) sent out by the Committee of the House of Commons in 1869, is as follows:—

"Are some of these fisheries in a backward state, and if so, what obstacles impede their development, and what means are required to foster them?"

Many of the replies point to the necessity of a better class of boats, as being the principal means of fostering and improving the fisheries, but state that the fishermen are too poor to procure them, unless the Government introduce a system of aid in the shape of bounties. One says:—"The mackerel and herring fisheries are in a very backward state; the obstacles that impede their development are the want of properly fitted vessels and boats, which the inhabitants have not the means of procuring, and there being no merchants here having enterprise sufficient to fit one out." Another says:—"All that is now required to make our fisheries the best on the continent, is encouragement from the Government in the shape of bounties."

Another says:—"The fisheries have fallen off a good deal within the last four years, and will have to be discontinued unless the Government should give aid," and much more to the same effect.

No doubt the sum, for some time past annually distributed among the fishermen in the shape of bounties, has led to a large amount of amelioration of their circumstances as set forth in 1869, and that in many places boats and vessels have been improved to some extent. But it is well known that great improvement in that respect is still needed, and it appears to us that perhaps there is no way in which the Government could do more to improve the fisheries, at a moderate expense, than by furnishing model boats, suited to the requirements of the respective localities, after careful investigation by competent men, assisted by the opinions of the fishermen themselves. We consider this a better way than any new system of bounties, and many of the answers made to question 9, in 1869, agree in this.

TRAWLING.

16. From all that has been already said and quoted on the subject of trawling, it will be seen that we consider trawling, especially within the territorial limits, to be exceedingly injurious to the herring fishery. It is established on undoubted authority in Britain and Ireland, that trawling scares away the herring from the fishing grounds, drives them away from the spawning grounds, and disturbes and destroys the spawn when deposited. The salmon, halibut, lobster and flat fish fisheries generally have been seriously injured, and in many cases destroyed by the operations of the trawlers.

We therefore consider that trawling and the use of all destructive seines and traps, calculated to disturb the herring in any way and to destroy large quantities of immature fish and spawn, should be absolutely prohibited within the 3-mile headland limit, and that efforts should be made by the Government to effect an international arrangement by which trawling on the high seas should be regulated and restrained when the herring shoals are in motion off the coasts, so as not to drive them away from the fishing or spawning grounds, or disturb and destroy the spawn when deposited on banks outside the territorial waters. There can be no doubt that trawling of any kind on herring fishing grounds or where herring do congregate must prove highly injurious to the herring fishing industry, by scaring the fish and driving them from their native or selected haunts. It is now generally held that the salmon returns to its native streams, and there are those who contend that the herring is endowed, in like manner, with a similar instinct, and being as already stated, a timid fish, anything tending to scare or drive it away should not only be avoided, but as far as possible, in the general interest of the country, strictly prohibited.

Public sentiment in Britain, which at first was largely in favor of the trawlers, has undergone a great change, and now supports the Legislature and the Government in the recent legislation still further restraining and regulating the operations

of the trawlers, and the change in public sentiment is still going on in the same direction the more the damaging effects of trawl fishing becomes known. We think that under no circumstances should foreign trawlers be allowed to fish within the Territorial waters.

We are glad to see, since writing the foregoing, that many of the inspectors and overseers are of the same opinion. Overseer Rawlings, of Musquodoboit, Harbour in his report for 1887, says: "There is a large increase of herring and mackerel as compared with last year. The prevailing opinion is, that were the present protective system kept up and purse seine fishing prohibited, the herring and mackerel would always be abundant on our shores."

Mr. Bertram, Fishery Officer for Cape Breton Island, in his report for 1887 says:

"In my previous reports reference is made to injurious methods and contrivances for taking fish, and I beg leave to refer again to the subject as the one primary condition on which the perpetuity of coast fishing depends, at least within the three-mile headland limit. The evils entailed by the wasteful destruction of fish and removal of such as escape from their usual grounds of resort, in consequence of seining near or within the bays, has already been referred to in previous reports. This is the greatest objection to allowing foreigners to share in our shore fisheries. But like practices by our own people are equally mischievous, the difference being that the evil is lessened by fewer being engaged in destructive methods when foreigners are excluded. The use of seines, traps and trawls should be prohibited anywhere inside of the three mile limit, from headland to headland, from which aliens are at present debarred, if our fisheries are to be preserved in perpetuity. Most fishermen acknowledge this, and would like to see an Act enforced for the exclusion of all such methods of catching fish within the limit specified, excepting hand lines and straight nets—even the latter with certain restrictions. The only parties who would raise any objection to such a regulation are a few capitalists who can afford the more destructive instruments, and who invest only for present and immediate profit, utterly regardless of consequences to follow. The staple and most valuable branches of fishing were regarded in the purely commercial aspect, or as food production, are those of cod, herring and mackerel. These are the three lines of fishing upon which the ordinary fisherman depends for his subsistence, and those upon which the trader essentially relies, whether for sale in the home market or for foreign export. Yet they are the branches which suffer first and most heavily by the methods of seining, trawling and trapping. On the principle of the greatest good to the greatest number and of the eventual greatest possible good to all, seines, trawls and traps should be rigidly excluded by law from the inside limits named, if not from the Gulf of St. Lawrence entirely."

WASHING OF HERRING.

17. As stated elsewhere, the washing of herring before curing is not practised in Scotland, and so far as we could learn, never has been. The Scotch curers with whom we conversed on the subject, were surprised to hear of herring in Canada being washed before curing. They could hardly believe such a practice possible. To show what has been the practice in the Maritime Provinces in time past, we quote from the answer of Mr. Gordon, Pictou, to question No. 4, in 1869; he says:—

"It is the universal practice of Nova Scotia fishermen to steep the fish for hours in water before salting down, and expose them to the action of the sun during the hottest period of the season, until the water becomes warm, under the erroneous impression that they are thus benefitted by the extraction of the blood. Under this treatment herring part with their scales and juice, and are deprived of that taste and flavor peculiar to herring properly cured. Besides, the body of the fish thus saturated with water is rendered tasteless, brittle and short, and not calculated to turn out satisfactorily at the end of a long sea voyage. The Scotch curers take every precaution to keep the herring from contact with water, before and after salting. Salt the fish in their blood, and the salt will extract the blood."

Now, it must be quite clear to every man who realizes the importance of retaining, intact, all those qualities of substance and flavor which render the herring so valuable as a healthy and pleasant article of food, and which are so highly prized in Europe, as already stated, that there could be no more effectual mode devised or adopted for the total destruction of all those qualities, than the mode above described by Mr. Gordon. What would be thought of any man or body of men who should treat any kind of animal flesh, beef or pork, for instance, in such a manner, and what would be thought of any one who should subject those articles of food to such treatment? Who would think of selling or buying meat so treated? Then to cover up the damage done by the water soaking to the herring, inordinate quantities of salt are used, and this extracts any vestige of flavor the water may have left, and destroys all the nutritive qualities of the herring.

Here we may be permitted to refer to another pernicious habit, already adverted to, the practice of putting brine on the newly packed herring, in addition to the salt in which they have been cured. This practice is highly objectionable, and is one also that effectually destroys the good qualities of the herring in flavor and substance. This practice may arise from the custom of putting herring down in large casks or vats, and then, after a time, repacking into the common tight herring barrel. Herring treated in this way cannot be much better than those soaked for hours in warm water. The herring should be packed in the tight herring barrels in the first instance, and fully salted, when the necessary quantity of pickle will be formed from the dissolution of the salt caused by the moisture in the fish. The addition of newly made pickle not only interferes with the curing process going on in the barrel, but, as already stated, as effectually destroys the natural qualities of the herring as soaking in water, or the action of the sun's rays acting through the medium of water. We therefore consider that the practice of washing and soaking herring in water and of adding newly made pickle to newly packed herring should be strictly prohibited.

CATCHING HERRING FOR MANURE.

18. This is done, we were informed, sometimes by and for landlords in Ireland, but the practice it is said is not approved of by the people; being in their opinion a wanton perversion and inexcusable waste of the bounties of Providence, intended for the food of man. It is held by many that while nature is generous and profuse in her gifts to man, yet that she revolts at the wanton waste and needless destruction of those blessings.

We share this opinion. We consider that such reckless waste leads to recklessness and improvidence in other respects, and begets a spirit of lawlessness which may interfere more or less with the observance of the Fishery laws, and the Regulations of the Department, enacted and promulgated solely in the best interests of the fishermen themselves. We regret to see that the habit of catching herring for the sole purpose of manure prevails in several places, as appears from the reports of inspectors and overseers, and that attempts are made to justify the practice, on the ground that the herrings enter the bays in the spring in such masses that many are literally blocked with them; and also that it is not possible to export herrings from those localities at a profit. It is to be hoped that such changes and improvements will be carried out in relation to the herring industry, as will make the curing of herring profitable, in every place where herring suitable for commercial purposes may be found. A French Canadian gentleman well informed in fishery matters informed us that much of the herring taken in Quebec is soft and unsuitable for exportation. If so, there must exist a cause for this deterioration, and this may arise from the herring, which is emphatically a salt water fish, entering the Gulf waters containing a large admixture of fresh water, which must inevitably lead to the deterioration of the fish, and this may be from the great quantity of fresh water in the Gulf.

Such fish should not be caught nor put up for sale. The herring come into the bays referred to in the spring either in search of spawning ground, or in an

exhausted condition after spawning, or in search of suitable food which may abound in those localities. In any case, if they cannot be taken profitably for commercial purposes they should be left alone, to remain while they stay, unmolested until they return by the way by which they came, to the deep waters of the sea, there to join other shoals, and where in improved condition, at some future time, they will amply reward the labour of the more considerate and less reckless fishermen. We consider the habit of catching herring for manure to be inconsistent with the Christian civilization of the age, and that the practice should be strictly prohibited.

HERRING OFFAL.

19. We have already shewn from unquestionable authority the evil effects upon the herring shoals of throwing offal or fish refuse into the sea, resulting, in the case of Sweden, in combination with day light net fishing, in banishing the herring from the shores of that country, for a period of 69 years.

All experience shews that the practice of throwing offal into the sea near the grounds frequented by the herring shoals, invariably results in scaring the fish away for a time, or driving them away permanently, and we consider the practice should be prohibited under heavy penalties. And that, as in the case of trawling, the prevention of the practice on the high seas, should be brought about by international arrangement.

In Scotland all herring offal is carefully placed in barrels and sold to the farmers for manure, at so much per cart load, in some places 25 cents, in some places 50 cents. Mixed with vegetable mould or black muck, it makes a most excellent compost for manuring purposes.

In some parts of Europe large quantities of oil are extracted from the offal of herrings, by the process of boiling in water in large pans, the water purifying the oil and making it suitable for commercial purposes. We think the law as to the disposal of offal should be strictly enforced.

CONCLUSION.

While striving earnestly and faithfully to fulfil the duties imposed upon us by the Government in the matter of this investigation, we desire to be permitted to say that we are, at the same time, animated by a strong personal interest in the welfare of the fishermen of the Maritime Provinces, and a strong desire to see such changes brought about, for the improvement of the herring industry, as will greatly improve the condition of the fishermen, and lead largely to an amelioration of existing evils, as well as to the establishment upon a sound commercial basis of this important branch of the commerce of the Dominion.

The Hon. Mr. Wells, a prominent citizen of the United States, some time ago visited the Maritime Provinces, carefully investigated the position and circumstances of the Canadian fishermen of the Atlantic coast, and satisfied himself as to what a hard struggle they have for an existence.

On his return to his own country he told his countrymen that the only farm the Canadian fishermen on the coast of the Atlantic had was the sea. That that was his sole patrimony, and that no man had a right to trespass upon it, or rob him of its products.

While amply protected from the encroachments of envious or covetous neighbours, let us hope that he may be assisted by his brother Canadians, in every way consistent with justice to the rest of the Dominion, in the profitable working of his estate and the development of its rich natural products, and its unbounded resources.

All of which is respectfully submitted.

WM. GUNN,
M. G. McLEOD.
Delegates.

December 2th, 1889.

PART III.

REPORT

ON THE

FISHERIES PROTECTION SERVICE

OF

CANADA.

1889.

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REPORT

ON THE

FISHERIES PROTECTION SERVICE

OF

CANADA.

1889.

By Lieutenant ANDREW R. GORDON, R. N.

TORONTO, 17th December, 1889.

The Hon. CHARLES H. TUPPER,
Minister of Marine and Fisheries,
Ottawa.

SIR,—I beg to report on the work of the Fisheries Protection Service under my command, during the past season, as follows:—

The vessels forming the fleet were: The s.s. "Acadia," under my own command; the s.s. "La Canadienne," Commander Wakeham; the s.s. "Stanley," Capt. McLaren; the s.s. "Dream," Capt. Pratt; and the schooners "Vigilant," Capt. Knowlton, and "Critic," Capt. Pouliot. The steam tender "Argus," belonging to the Department of Customs, was also used, for a short time, in the month of November, as a fishery cruiser, under the command of Mr. W. H. Kent, chief officer of the "Acadia," who is also a Fishery Officer.

The s. s. "La Canadienne" was, as usual, employed in the Labrador district and the Gulf fisheries on the Quebec shores. The s. s. "Dream," in the Fisheries and Customs patrol, cruised in the waters of the Bay of Fundy, about the boundary line. The "Acadia" and the "Stanley," with the schooners "Vigilant" and "Critic," were engaged on the Nova Scotia shores and in the Gulf of St. Lawrence, in protecting the inshore fishery from depredations by foreign fishing vessels, and in the enforcement of the various regulations established by the Department for the protection of the fisheries.

The only seizure of a foreign fishing vessel was that of the United States schooner "Mattie Winship," of Gloucester. This vessel was arrested and held for fishing within the territorial waters of the Dominion of Canada, being anchored, at the time of the seizure, one and a half miles from Cape North in Cape Breton Island, with her dories away from the ship, manned and carrying their baited trawls. The vessel was subsequently bonded, and finally released on payment of a fine of two thousand dollars, together with the costs of all proceedings. It is worthy of remark that this vessel, whose master had previously contended that United States fishermen required nothing of Canada beyond their rights under the Treaty of 1818, immediately on his return to our waters after being released, purchased a license under the *modus vivendi* of the Treaty of Washington.

The schooner "Lizzie M. Center," Captain Smith, of Gloucester, was detained in Aspy Bay, for non-compliance with customs laws, but released on Captain Smith pleading ignorance of the existence of a custom house there, and his subsequently reporting in proper form.

The officers and men of the several vessels in the fleet under my command performed their duties most satisfactorily; the commanding officers being worthy of special notice for the zeal and tact with which they have performed their duties; and it says much for the manner in which their work has been accomplished, that while there have been very few complaints of acts of trespass by foreign vessels, there still exists the greatest good feeling between our officers and the masters of foreign fishing vessels.

The Modus Vivendi.

This pendicle to the rejected Fishery Treaty which terminates on the 14th of February next, has been much more largely taken advantage of by United States fishing vessels this year, and it may be broadly stated that there are certain lines of fishing which no opportunity, however favorable, could make remunerative to them, unless they can use either our ports or those of Newfoundland for purposes other than the four guaranteed to them under the Treaty of 1818. As an instance, I may quote the "fresh halibut fishing" on the Grand Banks. Unless these vessels can come to our ports or those of Newfoundland for bait and ice, this fishing will not pay them. As showing how this privilege is availed of, I append to this report a table showing the names of United States fishing vessels which visited the Port of Canso Nova Scotia, during the season of 1889. This table shows that at this port alone 252 visits were paid by United States fishing vessels; of these 153 were paid by licensed vessels seeking bait, ice or supplies to prosecute their calling; 11 were fishing vessels having no gear on board and bound as trading vessels under register to the Magdalen Islands or Newfoundland to purchase cargoes of fish; and of the remaining 88, which were unlicensed fishing vessels, 55 were mackerel seiners, leaving only 33 visits by unlicensed bankers, as against 153 quoted above as paid by those that had taken out licenses. Many other ports would make a similar showing, and it is safe to conclude that the privileges granted under the *modus vivendi* are now highly appreciated by the United States' fishermen.

Customs Regulations.

In the early days of the work of fishing protection, most of the friction which occurred was the result of infractions of Customs regulations by fishing vessels. These regulations had been practically in abeyance during the term of the old Washington Treaty, and were only revived for enforcement against both our own and foreign fishing vessels in consequence of the conditions of the Treaty of 1818 being brought into force by the abrogation of the fishery clauses of the Treaty of Washington; in this respect, we have now no trouble; the masters of foreign fishing vessels understand all the requirements of the law, and willingly comply with them.

In order to meet the convenience of foreign fishing vessels seeking bait, the preventive officers of Customs at Crow Harbour and Whitehaven, in Guysboro' County, N.S., have been granted authority to enter and clear vessels. The appointment of an officer of a similar grade at Port Malcolm, in Habitant's Bay, Cape Breton, would also be much appreciated, and would ensure real compliance with the law, which can only now be made at very considerable inconvenience, inasmuch as vessel masters have at present to go overland a distance of some seven miles to Port Hawkesbury in order to enter or clear their vessels. In the early part of the year many vessels call here for bait during the spring run of gaspereaux; and this port is also a place of shelter in the spring for vessels bound west to wait for the ice to clear out of the Straits of Canso. I would therefore urge upon your notice the advisability, both in the interest of revenue and fishery protection, of having an officer appointed at Port Malcolm.

THE MACKEREL FISHERY OF 1889.

The United States mackerel fleet which visited the Canadian waters during the season of 1889 consisted of sixty-two vessels, their catch being recorded in the

table subjoined. In the cases when a vessel made two trips a double row of figures indicates the catch in each voyage:—

Name.	Port.	Catch	Name.	Port.	Catch
		Bbls.			Bbls.
Ambrose H. Knight	Gloucester	.....	John W. Campbell	Gloucester	35
A. R. Crittenden	do	250	John M. Plummer	Portland	.....
Augusta E. Herrick	Boston	.....	Lizzie M. Center	Gloucester	90
Alice C. Jordan	Gloucester	231	do	do	110
Agnes	do	50	Lizzie W. Hannum	do	40
Bluejacket	do	9	Leona	do	5
do	do	168	Mayflower	do	425
Belle Nauss	do	280	Marion Grimes	do	40
Belle Franklin	do	47	M. L. Wetherell	do	290
Chas. Levi Woodbury	do	7	Moro Castle	do	.....
do	do	190	Margie Smith	do	.....
David F. Law	do	14	Northern Eagle	do	.....
David Crockett	do	80	Orient	do	200
D. A. Wilson	do	51	Procyon	do	0
Edith Rowe	do	213	do	do	180
Ernest F. Norwood	do	34	Rushlight	do	50
Elsie M. Smith	Portland	5	Rapid Transit	do	0
Epes Tarr	Gloucester	50	do	do	180
Enola C	do	150	Rattler	do	50
Emma W. Brown	do	330	Robin Hood	do	50
Eastern Queen	do	105	S. F. Maker	do	270
Electra A. Eaton	do	272	Senator Saulsbury	do	110
Ellen Lincoln	do	.....	Senator Morgan	do	30
Flash	do	114	do	do	140
Flora Dilloway	do	80	Sterling	do	30
do	do	120	Star of the East	do	160
Geo. F. Edmonds	Portland	32	W. H. Foye	do	23
Governor Butler	Gloucester	140	W. H. Wellington	do	.....
G. P. Whitman	do	60	do	do	95
Herald of the Morning	do	.....	W. W. Rice	do	93
Henry Wilson	do	28	do	do	153
do	do	48	Willie Irving	do	30
Harry G. French	do	150	W. D. Daisley	do	113
Isaac A. Chapman	do	190	W. H. Oakes	do	98
J. S. McQuinn	do	95	Wm. M. Gaffney	do	.....
J. J. Clark	do	72			

Sixty-two schooners. Total take, 6,775 bbls.

The following is the take of mackerel for the years 1888 and 1889, made by United States fishing vessels off the Nova Scotian coast and in the Gulf of St. Lawrence:—

1888—83 vessels, take 10,418 bbls., average 126 bbls. per vessel.
1889—62 do 6,755 do 109 do

So far as the New England fleet are concerned, both in the Gulf and on the Nova Scotian and New England coasts, the mackerel season has been an unprecedentedly poor one, and the following table exhibits in a marked manner the continued decadence of the United States mackerel fishery. The returns not being yet available, the Canadian catch for 1889 is estimated, but that for the New England fleet is taken from the published returns of the Boston Fish Bureau, as stated in their circular of 13th December.

	1885.	1886.	1887.	1888.	1889.
Caught by U. S. vessels—Bbls.	330,000	80,000	78,000	40,000	17,794
" Canadians— do	148,450	152,292	131,653	65,777	65,000
Total product	478,450	232,292	209,653	105,777	82,974

If from the above figures for United States vessels for 1888-1889 we take the quantities quoted as being taken off the coasts of Canada, the remainder will represent the quantities obtained on the fishing grounds off the New England coasts. These remainders are: for 1888, 29,572 bbls., and for 1889 the minimum quantity of 11,219 bbls. Figures like these need no comment.

In Canada the fishing has remained about the same as last year, and the prospects are encouraging to this extent, that large quantities of small fish have been seen during the latter part of the season, which, if not destroyed in purse seines before reaching merchantable age, will go a long way towards restoring our fishery to its normal condition of late years, if not to its former degree of plenteousness.

Our Canadian fishery shows to great advantage when compared with the mackerel fishery of the United States, and it is safe to say that, without any great increase in the means of capture, our Canadian catch has been fully up to, if not in excess of, that of last year.

The habits of the fish seem to have changed completely; they no longer herd in large schools, and play about on the surface as they feed, but small quantities of fish are found almost everywhere. At one time this year fish could be raised at any point between Miscou Island and the Magdalens, making in the whole unqestionably a vast mass of fish, but far short of the multitudes which formerly frequented the waters of the Gulf.

I cannot help thinking that the apparent change in the habits of the fish is largely due to their diminished numbers, which would naturally make them more timid. The change, however, is not without its advantage, as it tells largely in favor of Canadian methods of fishing, the success of the hook and line fishing and the boat fishing inshore being quite marked during the past season.

In my report on the operations of the year 1888 I went very fully into the condition and prospects of the Canadian mackerel fishery, and subsequent experience has only tended to confirm and strengthen the views expressed therein, viz., that the depletion of the mackerel fishery was largely due, not only to the use of improper means of capture, but to the use of those means at improper seasons.

The United States Government recognising the importance of this fishery has legislated very effectively to prohibit the use of the purse seine in their southern waters during the season when the mackerel are about to spawn, the law being that no mackerel caught in a purse seine between the first day of January and the first day of June in each year shall be permitted to be landed in the United States, thus using the machinery of the Customs Department to inforce a law for the protection of deep sea fish on the high seas.

The United States fishermen recognising the fact that this law is a necessity, if there is to be any future for their mackerel fishery, loyally adhere to its provisions.

Owing, however, to the geographic position of our Canadian fishing grounds, a season which will protect spawning fish on the New England coasts will not protect them on those of Nova Scotia, and the season within the St. Lawrence is later still.

I would strongly urge upon your notice the advisability of endeavoring to make an arrangement with the Government of the United States for the preservation of the mackerel fishery. The best method of protecting the fishery would be the absolute prohibition of the use of the purse seine, and this prohibition could be made quite effectual by the passage of a law in Canada similar to that in force in the United States, but to extend over the whole year, and the extension of the United States term of prohibition to the whole twelve months. If this were done experimentally, say for a period of five years, the beneficial effects of the legislation would, I am sure, justify its enactment. But if it is thought that this measure is too drastic, then let the following fishing areas and close times be agreed upon, and laws similar to that now in force in the United States be enacted for the protection of the areas;

First, the present close season, or prohibition of the purse seine, to extend to all the waters of the north-west Atlantic. Second, that no purse seine shall be used north of the parallel of Cape Sable until after the first day of July in each calendar year. Third, that no purse seine shall be used within the waters of the Gulf of St.

Lawrence until after the first day of August in each calendar year—the boundaries of the Gulf of St. Lawrence for the purposes of this law to be the line joining Bear Island and Eddy Point, Straits of Canso, and the lines joining Money Point lighthouse, Cape Breton, with the lighthouse south end of St. Paul's Island, and thence to Cape Ray lighthouse, Newfoundland. If similar laws are passed by the United States and Canada for the protection of these areas, no costly or complicated police system will be necessary: the machinery of the Customs Department in each country can easily and effectually enforce the law.

The above-named limits may be described as (1) the New England mackerel grounds; (2) the Nova Scotia mackeral grounds; (3) the North Bay ground, the latter name being that applied by the mackerel fishermen to the whole Gulf of St. Lawrence. These separate limits are easily defined, and no difficulty could arise in administering the law on the ground of difficulty of defining a limit, and the divisions proposed are those which agree most nearly with the gradations of marine climate which govern the movements of these fish.

The destruction of these migratory fish before the spawning season must result in the depletion of the fishery, and if it is desired to prevent this destruction by wholesale, the abolition of the use of the purse seine in the above limits, and for the periods mentioned, is the minimum of protection that must be insisted on; for it is a fact, capable of demonstration quite simply, that spawning or gravid fish are taken on the Nova Scotian coast up till 1st July, and though the spawning season in the southern part of the Gulf is pretty well over by 20th July in an average year, we have in these waters so much fluctuation in marine climate that there is great variation in the period of spawning. I have therefore fixed on 1st August as the date of commencement of the purse seining, to allow for a late season and to cover the more northerly portions of these waters where the spawning season is later.

Many of the masters of United States fishing vessels admit that the unrestrained use of the purse seine has ruined the mackerel fishery, but some of them being part owners of vessels and gear are indisposed to support a measure, the passage of which would practically wipe out a portion of their capital for a time. In Canada the sum invested in these seines is comparatively small, and I do not think that there would be any real opposition from Canadians to the enactment of the proposed laws for the protection of the mackerel. In fact, I consider that continued comparative productiveness of the Canadian mackerel fishing grounds as compared with those on the New England coasts is largely due (1) to the protection afforded to fishermen, by securing the inshore fishing grounds from molestation and continual harassment by a large fleet of foreign fishermen, thus affording the fish an area in which to spawn comparatively undisturbed; and (2) to the fact that Canadian fishermen have not so extensively adopted the use of the purse seine as a means of capture.

One of the best arguments in favor of the abolition of the purse seine is that many of the most experienced fishermen are already discarding the use of it, and all are relegating it to a secondary place in their operations. In the past, the mackerel schooner stood off and on, with one, two, or even three men at the masthead, looking for fish, and when a school was sighted, the seine boat was manned and the school surrounded; then, after the seine was pursed the schooner sailed up alongside the boat. To-day the *modus operandi* is entirely changed. The vessel now carries many barrels of bait, herrings, porgies and clams; these are ground up in a mill and mixed with water to the consistency of thin porridge; the vessel still carries a man at the masthead, but instead of sailing to and fro, she is allowed to drift slowly over the surface of the sea and the toll bait is constantly thrown over, two or three men meanwhile have their lines over the side, and if the fish rise to the bait and are taken on the hooks, all hands immediately get their lines over, and if the fish show in any number, the bait is kept going over steadily, the seine boat is manned and the seine quietly swept round both vessel and fish, and when the net is pursed up those left on board run the head of the jib up, the vessel pays off and rides easily and harmlessly over the cork rope, the haul occasionally amounting to a few barrels, but all the fishermen seem to admit that after sweeping the seine they have to change their

ground whilst they might have continued hooking successfully for some time longer had they not made the haul of the seine.

This purse seine fishing is in one sense like prospecting for gold or boring for oil, it being purely a speculative business, in which there still certainly remain a few prizes, but in which there are very many blanks; but each crew looks forward to making a big haul, and not to the continuous work which the hook and line fishing imposes on the men. As an instance of the prizes made, one vessel, the "Emma W. Brown," of Gloucester, got one hundred and sixty barrels of sea-packed mackerel at a single haul of her seine, which at the extraordinary prices which have prevailed would mean a take worth nearly four thousand dollars, or say upwards of one hundred dollars per man.

Another vessel, the "Mayflower," of Gloucester, made a somewhat similar haul, but these were the only two fortunate schooners in the whole fleet; yet the effect of these two hauls was to keep many of the fleet down on our coasts for some weeks later than they otherwise would have been.

One marked and of late years somewhat unusual feature of this season's fishing was the run of fine mackerel which struck in on the Nova Scotia coasts during the earlier half of November. These were exceptionally large and fine fish, and would, in some instances that came under my notice, run from 130 to 160 fish to the packed barrel. I estimate that about three thousand barrels were taken of this fall run; and as many of them were marketed fresh in ice, this run was worth nearly sixty thousand dollars to the fishermen. In some parts of the coast this lot of fish when netted were considerably damaged by squid, which actually eat the fish after they are meshed in the nets, never totally consuming a whole fish, but eating a piece out of one and then testing the flavour of a second, till in some instances quite a serious proportion of the fish were damaged.

The Canadian mackerel net fishery by boats from the shore, and the net fishery by small schooners, requires regulation. This subject will be dealt with more fully in another part of the report; suffice it to say, that the two great points which it is desirable to attain are, first, the marking with registered marks all nets or other fishing buoys, and second, the absolute prohibition of day fishing by drift nets, say between the hours of 8 a.m. and 5 p.m.

In concluding these remarks on the mackerel fishery, I would state again that the additional experience which I have acquired only confirms my opinion as to the desirability, almost the necessity, of the prohibition, or at any rate the limitation, of the use of the purse seine.

To be really effectual, any arrangement must be of an International character; and I am of opinion that the majority of both Canadian and United States fishermen would be willing to accept some such arrangement as that suggested, at any rate tentatively, for a period of five years, and they would readily admit that, whilst it might in the first instance be the occasion of loss to those of them who owned their seines and vessels, some such regulation of the fishing is most desirable.

THE LOBSTER FISHERY.

Like the mackerel fishery this valuable industry has of late years greatly declined, and as during the past season part of the duty of the officers of the Fisheries Protection Service was the enforcement of the regulations for the protection of this fishery, I had the opportunity of examining more closely into the conditions of this fishery and the facts relating thereto than I had previously been able to do.

The present regulations are apart from the question of close time that lobsters under 9½ inches in length, or carrying exuded ova, may not be taken. Speaking generally, in the Gulf of St. Lawrence the close season is loyaly observed and all the large canneries in eastern Nova Scotia were closed at the proper time, though a certain amount of desultory fishing was carried on by individual fishermen during the months of September and October; and it should, I think, be pointed out that all through the months of July, August and September it was quite possible at any time

to buy a freshly, caught and boiled lobster in the Halifax market, though such parties as either bought or sold them were clearly liable to a penalty under the Fisheries Act.

The present regulations in regard to size limit and the destruction of females carrying exuded ova are intended as protective measures, and are without doubt protective enactments; but the question arises, how far the enforcement of these enactments is possible with the existing means at the command of the Department, and the still wider question of whether the enforcement of the regulation is compatible with the existence of the industry. I consider the fact undeniable, that taking the Gulf of St. Lawrence district, if the above quoted regulations were strictly enforced, not one single packing factory could run for one single day; and if the packers whose interest and desire it undoubtedly is to maintain this fishery were to attempt to enforce the law; the fishermen would directly reply that they could not make a living at fishing with adherence to those regulations, and therefore could not fish for the packers. The rigid enforcement of the existing regulations is therefore tantamount to the closure of the factories, and would in practice have the effect of diverting the business from the hands of the responsible citizens who are now engaged in it to those of fishermen of small means, who would get their supplies of cans from the merchants, and by boiling the lobsters in their houses and barns render it almost impossible to exercise any control whatever over them; and if these men were caught breaking the law the whole property which could be seized would probably be insuf ficient to pay the fine, and the alternative of imprisonment would have to be inflicted.

The history of restrictive legislation of this nature has been everywhere the same in every country where enacted, it has failed to protect the fish, and it is worthy of consideration whether shorter seasons for packing and the aid of artificial progagation may not attain in a greater measure the desired end, viz., the increased productiveness of the fishery, without the actual stoppage of an important industry.

The shortened season, coupled with the reduction in the number of factories, has already, to a perceptible extent, benefitted the fishery; and, from the information given me, I am led to believe that the lobster catch for the season of 1889 will show in the Gulf a marked increase over that of 1888; and further, whether the result be due to the mild winter or to the legislative enactment of the close season, the fact is stated that in the early part of the season the run of lobsters averaged larger than they have done for some years—that is to say, that the packers reported that fewer lobsters were required to fill a can than formerly.

Before considering what course it will be best to follow, it is desirable to discuss the life and habits of the lobster.

The lobster may be termed one of the scavengers of the ocean, frequenting principally the shallower waters near the shores; they are believed to remain always at or near the same place, only retiring in the winter to a little deeper water off shore. They are oviferous, the eggs being fertilized by actual contact of the male and female prior to the exudation of the eggs by the latter. When exuded the eggs are attached on the under part of the belly of the female in little bunches to the swimmerets, and are thus maintained in direct mechanical connection with the mother until individually hatched out. The attachment of the eggs to these hair-like swimmerets on the body of the female serves the double purpose of the aeration and movement of the egg, and also is its defence from attacks by other fish; but this attachment to the mother being purely mechanical, there is between the period of exudation and hatching out no process of nourishment by the mother, and therefore the eggs if detached may be easily hatched out under suitable conditions.

On first being hatched out the lobster assumes a free swimming form, and continues in this condition for some time; and in former years when lobsters were abundant in the Gulf of St. Lawrence their young formed a valuable bait, which attracted the schools of mackerel in to the shore waters; and it is during this epoch of their existence that they are carried up and down by the ebb and flow of the tidal current and thus distributed about our shores.

When once the free swimming stage is over and our lobster assumes his shell jacket, his rate of growth is an undetermined quantity. Col. J. Hunter Duvar, who

made a study of the question, estimates the age of reproduction at three years; the late Professor Baird, I believe, considered the lobster to grow much more slowly, but whether the age of becoming adults be three or five years, the rate of actual growth is known to be very rapid under favorable conditions. Cases have been quoted to me where lobsters have been caged and fed, and have shown astonishing rates of growth. These were, however, abnormal conditions from which it would be unsafe to draw any conclusions. I am, however, inclined to think with Col. Duvar that the average age of maturity will be found to be about three years.

Canada has perhaps suffered less than most countries from the comparatively unrestricted fishery which formerly prevailed; for we find the United States lobster fishery practically extinct, that of Great Britain in a state of decadence, and the Norwegian fishery also much depleted. All have sought to protect their fisheries by restrictive legislation, and all have alike failed. In regard to this, I cannot do better than quote from Professor J. C. Ewart, of Edinburgh University; and T. Wemyss Fulton, M.B., Commissioner of Fishery for Scotland, in their Sixth Annual Report of the Fishery Board of Scotland:

"The failure of restrictive enactments having been generally recognized, attention has been directed to the succouring of the dwindling lobster fishery by means of artificial culture. It is desirable to consider the principles underlying the procedure:

"If in any species or group of animals the destruction of individuals is by any means increased beyond their powers of natural fertility to make good the loss, then that group begins to diminish in numbers; and if the exceptional destruction is continued, the species will ultimately become extinct, and the process will be more rapid the more limited the distribution of the species."

This is the biological explanation of the results of overfishing which, in an economic sense, simply means that the demand for the product of the particular fishery over-fished is greater than unaided nature can supply; and there can be no doubt that the trap of the fisherman is the greatest enemy of the lobster. On the other hand, if the fertility of the lobster is increased sufficiently, as it would be in practice by adding largely to the number of young lobsters by artificial propagation, then the number of adults would be largely increased.

Messrs. Ewart and Fulton further point out that there is another point of importance in considering the *rationale* of the artificial culture of the lobster, namely, that by far the greatest amount of destruction takes place in the early stages, when the lobster is in the larval form, by artificially hatching the eggs of the lobsters, and rearing the young through the larval stages; until they have reached a certain size they are protected from their natural enemies, and if they were then transferred to the sea they would be better able to take care of themselves.

In the colony of Newfoundland, the Government have secured the services of Mr. Nielsen, a Norwegian expert, and have already commenced the artificial propation of the lobster.

In Norway, also, Mr. Dannevig has hatched out large numbers of young lobsters, and at very inconsiderable expense, and this eminent expert is strongly of opinion that the best way of improving the yield of lobsters is by systematically carrying on the hatching of eggs on a large scale.

In the United States, also, although the amount done has been limited in quantity, owing to the difficulty in procuring ova, lobsters have been successfully hatched out, and I am informed by the United States Commissioner of Fisheries that it is his intention to go more extensively into this work.

The principal questions now to be determined are, (*a*) On what scale is it necessary to carry on this work, that it may appreciably affect the supply? and (*b*), At what age is it best to set free the young lobster in the sea? The Scottish Commissioners advise raising the young through the larval stages, whilst the practice in the United States has been to deposit them in the sea very shortly after they are hatched out.

It has now been demonstrated that the artificial culture of the lobster is not only feasible, but is a comparatively simple and inexpensive operation. In Canada we are still in the happy position of being able to secure an unlimited quantity of ova, and are, therefore, in a very favourable position to embark in this undertaking. Our laws, as already quoted, have, for years, forbidden the capture of female lobsters carrying exuded ova, but this law has been found in practice impossible of enforcement. Berried lobsters are captured throughout the entire packing season, and I am informed that occasionally as much as 30 per cent. of the lobsters delivered at a cannery would be these illegally-captured females. It is asking a great deal of a fisherman's respect for the law to require him, when he is out alone in his boat, to put this female lobster back into the water, when he knows full well that the freshly-baited trap will be no sooner at the bottom than that same lobster will enter it and eat its bait, thereby preventing the traps from taking more fish. What actually happens is, if the man is working for a packer who is particular, he just scrapes the eggs off the belly of the lobster and drops them overboard, and what might have been 20,000 young lobsters becomes a single mouthful for the first cod fish that happens along; or if the packer is not a particular man, the female lobster, eggs and all, goes into the factory boiler and the 20,000 in embryo are equally destroyed.

By permitting the capture of these female lobsters, but insisting on saving all these eggs, at the expense of the packer, either by charging license or otherwise, we should obtain all the ova required for hatching out, and add enormously to the annual crop of young lobsters.

In order to commence this system, I would suggest that a certain area be set apart, and the factories therein placed under license. As an experimental area, I think that the portion of the east coast of Prince Edward Island, from Boughton Island to a point three miles west of Cape Bear, on the Straits side, would suit well; the hatchery to be located in Georgetown harbour. This district contains only four factories, averaging a pack of about two thousand cases per annum each. At a license fee of 10 cents per case, which these packers have signified their willingness to contribute, a sum of $800 per annum would be raised, to go towards the cost of maintaining the hatchery, and we should have the further great advantage of enlisting on the side of the law, or the protection of the fish the hearty co-operation of the packers.

There is another system for the protection of the lobster fishery which has up to this time not been put in operation, but which will, I think, commend itself, as being a protective measure suited to our needs, and *practically capable of enforcement.* I refer to the establishment of Closed Areas, to form nurseries for the lobster. In these closed areas no traps would be allowed, and from them the young fry, when in their free swimming state, will be carried up and down by the tide, and thus by natural propagation in these undisturbed fields the supply in general might be maintained.

These closed areas should be strips of water two miles in width, and extending out at right angles to the general trend of the shore.

The boundaries to be marked by the alignment of two small beacons, and a closed area of two miles out of every ten to be set apart. There would thus be alternately eight miles fishing area and two miles closed area.

I may now, in concluding my remarks on this fishery, sum up the recommendations which I have the honour to make in regard to the measures likely to improve the yield :

First.—That the packing season in the Gulf of St. Lawrence close on the 5th July, instead of the 15th, as at present.

Second.—That every buoy to lobster trawl, net trawl, or in fact every fisherman's buoy, be marked with a registered number or mark, register to be kept with the nearest Custom House officer, or fishery officer, all unnumbered or unmarked buoys to be confiscated and destroyed.

Third—That the artificial culture of lobsters be undertaken and proceeded with on a commensurate scale as soon as possible. The packers to save all the ova.

Fourth—That the system of nurseries, or closed areas, be adopted for the waters of the Gulf of St. Lawrence.

If these measures are adopted, I believe that we may without injury permit the capture, during the short fishing season, of lobsters without regard to sex or size. Neither the packers nor the fishermen want the small lobsters, as they pay no one for handling; but the present regulations are very difficult to enforce, and really somewhat difficult to comply with; but given the adoption of the above proposals, and I think that the result will be that in a short time our lobster fishery will show marked improvement, and become again one of our most valuable shore fisheries.

THE SHORE FISHERY.

The shore fishery is that which is carried on in boats from the shore, as distinguished from the sea fishery, carried on in decked vessels. The number of men employed in the sea and shore fisheries respectively is given below for the three Maritime Provinces:—

	Sea Fishing in Vessels.	Shore Fishing in Boats.
Nova Scotia	6,644	21,463
New Brunswick	699	9,141
Prince Edward Island	816	3,563
Maritime Provinces	8,159	34,167

The above table shows what a vast number of our population are engaged in, if not all actually dependent on, the shore fishery. Anything, therefore, which tends to maintain or improve the yield of this fishery is worthy of the closest consideration.

The relation which exists between this fishery and our river fisheries is that of pure interdependence; if the supply of anadromous bait is cut off there is no longer any inducement for the sea fish to come in, and the shore fisherman has to seek his fare at his peril, miles from land, when formerly he fished at the harbor's mouth. In the interest, then, of this our great fishery, I would urge on your notice the necessity, rather than the desirability, of strictly enforcing all those legislative enactments which have been passed to preserve our rivers from being blocked to the passage of fish by dams, or polluted by the discharge into them of sawdust or any other offal of mills or factories.

The results of all recent investigations on fishery matters go to show that it is almost impossible to over-rate the value of the inshore waters in this relation to the productiveness of the fisheries, and I think it desirable in the interests of the fishermen themselves that (*a*) the methods of prosecuting the fishery within the territorial waters should be subject to regulation, and that (*b*) some system should be adopted for the better collection of information in regard to the actual catches and movements of the various fishes, our knowledge of which at present rests largely on the empirical views of fishermen.

The inshore or territorial waters possess as fishing grounds, peculiar value; not only that, they should furnish the fishermen with the reward of his toil at less risk and with more certainty, but also and particularly because they are the the sheltered spawning grounds of some of the sea fishes and the nurseries for the young of these, and of the anadromous fishes which have been brought down by the river currents and drift with ebb and flood in the protected waters of our deeply indented coast line, and if netting is incessantly carried on on an immense scale the movements of the fish will be so interfered with as to injure the fishery.

It is a cardinal principle for the protection of a fishery that the fish must be allowed freely to come in to the shores for the purposes of reproduction.

Taking the returns for the year 1888, the following table shows the amount of net in actual use on our Atlantic and Gulf shores. The nets are so-called drift nets,

anchored at one end and drifting or swinging with the tide; they average abont 5 fathoms deep, and without including seines, the figures are:—

Nova Scotia	762¼	miles.
New Brunswick	334¾	"
Prince Edward Island	56¼	"
Total	1,153¼	"

It is difficult to realize what such a quantity of net means, but if the nets were joined end to end they would be sufficient to form a wall of net continuously, and reaching from the United States boundary line up the Bay of Fundy to Quaco Head; thence across the Bay to the Nova Scotian coast, and following this coast round Cape Sable and along the shore to Canso; thence around Cape Breton and down to Port Hood; thence to Cape George, and continuously up the shores of Nova Scotia and New Brunswick to Miscou; thence across the Bay Chaleur to Cape Gaspé, and we shall still have net enough left to almost encircle Prince Edward Island—in fact, we are using nets enough to wall the fish off the coast.

The cheapened cost of net, coupled with the high prices for mackerel and herring, have induced our fishermen to go more largely into net fishing than formerly, and the consequence is that many of them have now more nets set than they are able to handle daily. They are thus left out night and day, on the idea that the nets may rot, but the fish will pay for them; and hence we have occasionally great waste of fish, since, being unable to attend to the nets, they may be left over for a few days in bad weather, and when overhauled the fish are decayed, and unfit even for lobster bait.

The old statute law of Prince Edward Island was that these drift nets were not allowed to be kept set during the day time, and the necessity for such a law is certainly very much greater now than formerly, and the principle should be established that no man should fish more nets than he can, under ordinary circumstances, attend to daily.

In England, or more correctly, in the North Sea, it is, I believe, the custom that trawlers fish in the day time and the netters have the night, when both are fishing the same ground; and if in Canada we wish to prevent the injury of the inshore fishery we must regulate this net fishing so as to allow the fish to come in, whether they be gaspereaux, herring or mackerel.

Fishermen may object to regulations, and claim, for instance, that the herring fishery is as good as ever. They cannot say this of the Gaspereaux, and the value of having all these fish plentiful in shore is less in the fact of capturing themselves *but that they bring the cod in after them.*

It must always be borne in mind that of late years the means of capture have been greatly increased; hence while there is no apparent decrease shown in the returns, the damage to a fishery may be very real, and the plaint of many fisherman is the same, viz.: that it takes a great deal more twine (*i e.* net) to take the fish now than formerly; and instancing particular waters, I may state that I have seen, St. Peter's Bay, C.B., Habitant's Bay, the North Bay of Prince Edward Island, off St. Peter's, so full of nets that it was almost impossible to work a steamer through them. These must form a regular dead wall to keep the fish off shore, as they are left set day and night, thus keeping the fish from their spawning grounds, and consequently keeping the cod off shore.

I have therefore the honour to recommend that (1) all buoys be marked with a registered mark, and (2) that no drift nets be allowed to remain set in the water during fine weather, between the hours of 8 a.m. and 5 p.m., within the territorial waters of the Dominion. This would at once reduce the amount of net used, as fishermen would not take out more than they could handle daily.

I would further recommend the extension of the system of nurseries, or preservation of spawning beds, which is now followed by the Department in its administration of the Bay of Fundy herring fishery at Grand Manan.

There is, I am informed, a very valuable spawning ground for herring off the mouth of the St. Mary's River, N.S., near Wedge Island, and I have myself seen a whole fleet of netting schooners, some carrying a hundred nets, at anchor there. I would urge upon your notice the advisability of having this fishery specially reported on by the Inspector of Fisheries, and if found to be a regular spawning place for herring, that a closed area or nursery be set apart in which nets shall not be allowed to be set.

All fishermen at first object to restrictions, but experience on Grand Manan Island has shown how valuable to the existence of the herring fishery are these regulations, and as this fish forms one of the staple articles of food of a large number of our maritime population, its proper maintenance is a matter of great importance to the country.

Secondly,—As to the collection of careful and accurate information in regard to the takes of fish on the different grounds:

Our present statistics, whilst doubtless valuable from a commercial point of view, fail entirely to present that particular view of the question which, in the interest of the economic management of our fisheries, it is desirable should be studied. What we want is more definite information of the fishing from year to year on the individual fishing grounds, and the entire separation of the takes by boats and those by decked vessels. We have at present no means of watching this increase or decrease in the fertility of the different grounds, and the causes of any change in the movements of the fish. As an instance of how small a matter will occasionally, at any rate temporarily, injure a fishery, I may instance a case which was reported to me at Port Hood, the circumstances of which were as follows:—

There is a small bank or slight rise in the bottom about eight miles off Henry Island, on which the Port Hood fishermen fish in their boats; this bank had yielded very well during the season, until late in October an American banker came and set his trawls there and commenced cleaning the fish on the ground and throwing the gurry overboard. For the next day or so the fish taken were found full of this gurry but then the fishing ceased. I do not mean to assert positively that we have here a causal connection between the deposit of gurry on the bank and the departure of the fish, but we certainly have matter for the closest possible investigation.

The method of gathering information which I propose should be adopted is partly that of the Scottish Fishery Commission, who, speaking of the system, say: "If the system for collecting statistics recently instituted is faithfully carried out for a series of years under proper supervision, our fishery statistics will be far more complete and valuable than those of any other country; and the necessity of periodic Royal Commissions of inquiry will be at an end."

The method consists in supplying each of a certain number of fishermen at each port in the area from which it is desired to obtain information with a specially pre-prepared book, in which he will record his daily catch throughout the season. Accompanying the book would be a small chart, ruled off in squares, each square having a distinguishing number, The fisherman then records in his book the number of the square in which he has been fishing, and his catch giving average size and condition of the fish, bait used, and all particulars.

I think it would be possible to obtain volunteer reporters, but in each port a small money prize might be given for the most complete and valuable record sent in at the close of the season.

I would further suggest that to every decked vessel whose master was willing to make reports there should be given a similar book to that supplied to the boat fishermen, and also a copy of the chart of the fishing grounds of Eastern Canada as shown on the Imray chart, "Belle Isle to Boston." This chart to be ruled off in numbered squares, and the master to enter daily in the journal the number of the square in which the ship was at noon on that day, the kind and quantity of fish taken, the average size and condition of the fish, and the bait used. We should in this way collect a vast amount of valuable information in regard to the fisheries, which

would be available for the study of the many questions which arise and the complex conditions which surround and affect this great industry.

FISHERIES INTELLIGENCE BUREAU.

In accordance with your instructions, during the month of May last, I organized this Bureau in Halifax, Mr. D. McLennan, clerk to the Board of Examiners of Masters and Mates, taking charge of the receipt of the information and preparing for publication a daily synopsis of the movements of the fish, as shown by the information when placed on the daily map.

The measure of success which attended the work of the Bureau is chiefly due to the public-spiritedness of the Collectors of Customs at the various ports, and to others who kindly acted as volunteer reporters, many of them giving a considerable amount of time and trouble to the work of collecting information for the Bureau; and I now desire to publicly acknowledge the value of the services rendered by these gentlemen, and to tender them my thanks for the same.

Thanks are also due to the Western Union Telegraph Company for the liberal character of the arrangements made by them for the transmission of certain information to the Bureau by telegraph.

As a question of immediate and practical benefit to the fishermen, the Bureau was only a limited success—the cause being, that owing to the lapse of time, which, as the reports came principally by mail, was generally from three to four days between occurrence and publication of the events reported, the conditions had frequently changed before they could be acted on by the fishermen.

As, however, the total expenditure on this service, apart from the salary of Mr. McLennan was only $135, the experience gained, the information collected, and the several occasions on which the fishermen were able to avail themselves of the work of the Bureau, is a showing of great value for the above small expenditure.

The system is correct in principle, but requires for its practical application to the modern needs of the fishermen that information should be obtained by telegraph daily from a sufficient number of stations to make up the map and issue the synopsis. If these messages were to be sent from the reporting stations to Halifax daily, about 6 p.m., and the map prepared at 9 p.m., the synopsis could be ready for the press that night, and any fishermen wiring for information to the Bureau would be sure of having the very latest news, whilst the publication of the synopsis of the previous day's fishing by the morning papers would in many cases give the information required by the fishermen in ample time for them to act upon it.

I have not yet been able, owing to pressure of other work, to examine all the data collected, but the maps and reports contain valuable matter for the study of the movements of the fish.

I regret to say that we had one case of false information being transmitted to the Bureau, but as in this case the information was given to the Bureau reporter at second hand, no action was taken, beyond ascertaining beyond question who actually first gave utterance to the falsehood.

I do not think it is claiming too much to say that the work of the Bureau was favourably regarded by the Maritime Province public, and that this year's tentative work, at an almost minute cost, has opened the way to the establishment of a really valuable Branch of the public service.

I have the honour to suggest that the sum of $2,000 be voted for the work of the Fisheries Intelligence Bureau during the season of 1890, the work to be considered still of a purely tentative character, and the reports to be gathered from a limited number of stations only, but to be forwarded to the bureau by telegraph.

If this work is carried on, and the proposed system of supplying record books to the fishermen is adopted, the Department would soon be in possession of much valuable information in regard to the life, history and habits of the fishes, which would enable them to deal intelligently with the many and vexed questions which arise, and on which, at present, our only knowledge is derived from the somewhat empirical views of the fishermen themselves. Among the ends which it is hoped we

may ultimately attain are: first, the education of the fishermen up to the idea that all restrictive enactments are really enforced for his benefit; and second, the conservation of the large source of wealth and food supply to our people. To attain these ends the money spent in collection of accurate observations on the life-habits of fish is certainly spent in the best interests of the people.

STORM SIGNALS.

During the season of 1889 storm signals for the benefit of the fishermen have been erected at Escuminac, Souris, Canso and Ingonish. These were all in successful operation at the close of the season, and were much appreciated by the fishermen.

I would respectfully urge the re-establishment of the storm signal service station at Louisburg, C.B., now that telephone communication has been made with Sydney, and inasmuch as the expenditure on account of the meteorological service is more useful to the boat fishermen who fish at a distance from land than to any other class of mariners I would strongly urge upon your notice the advisability of erecting masts at the following places:—

New Brunswick—	Shippegan.	Nova Scotia—	Port Hood.
do	Caraquet.	do	Arichat.
P. E. Island,—	Tignish.	do	Liscomb.

The actual cost of erection of the storm signal apparatus at the four stations organized this year was:—

Adapting mast at	Escuminac	$ 5 00
Erecting mast at	Ingonish	50 00
do	Canso	50 00
do	Souris	75 00

I estimate the cost of erecting the six proposed masts at $400, and the subsequent maintenance at:—

Five stations, for nine months each		$225 00
do	petty expenses, oil, &c	25 00
One station, twelve months		60 00
do	petty expenses, oil, &c	5 00
Total maintenance		$315 00

There is another point which is of great importance when considering the successful working of the storm signal system, which it is desirable to elucidate most thoroughly, and which can I think be profitably worked out from observations taken in Canada—I allude to the relation which exists between the velocity of the wind at sea and the barometric gradient.

The observations which are now made at some of our stations near the sea coast are most misleading in this respect; the exposures of the wind instruments whilst they may be the best obtainable near the residence of the observer, are so poor that the wind frequently reaches the force of a gale outside of either Sydney or Halifax harbours whilst the anemometers at the meteorological stations only indicate a strong breeze. I would urge upon your notice, in the interests of our fishermen, the advisability of establishing, for a period of at least two years, three special wind stations and one barometric station, according to the following plan:

Place one anemometer with anemograph at Low Point lighthouse, near Sydney, Cape Breton; a second on Sambro Island, off Halifax harbour, and a third with the barometer at the temperature station which we now have on Sable Island.

The Meteorological Service has the instruments in stock, which can be loaned for the purpose, and the cost would only be the setting up of the instruments—say in all $50, and an allowance of $50 a year to each of the observers, making the total cost of the observations $350, which would be spread over two years.

The resulting benefit will be the improvement of the predictions in regard to the force of the wind in the Maritime Provinces, which may reasonably be expected to follow the solution of the problem in question.

On the licensing and marking of

CANADIAN FISHING VESSELS,

I beg to call your attention to the difficulty which our police vessels continue to find in distinguishing, at any little distance, the difference between Canadian and United States fishing vessels.

In my previous reports I have drawn attention to this point, and have suggested that the difficulty might be overcome either by licensing or otherwise controlling our fishing vessels. These vessels draw a very considerable sum in the shape of tonnage bounty, and it would be no great hardship to insist that a vessel, in order to receive the bounty, should, in the interest of the more efficient working of the Fisheries Protection Service, be compelled to carry, either on her stem foresail or mainsail, some distinctive mark, such as a large diagonal cross made of brown, tanned cotton, and stitched on both sides of the sail, the cross to be of sufficient size to be easily distinguished at a distance.

The lack of some mark of this kind has frequently given rise to rumours of trespass within the limits by foreign fishing vessels, and when the investigation has been held the reported trespass proves to have been a Nova Scotian schooner, many of which now compare very favourably with the best specimens of United States fishing vessels.

I have the honour to be, Sir,
Your obedient servant,
ANDREW R. GORDON,
Commanding Fisheries Protection Service.

APPENDIX "A,"

BEING Lists of United States Fishing Vessels which visited the Port of Canso, N. S., during the Year 1889.

UNITED STATES Fishing Vessels under Trading Register visiting Canso, N.S., during the Year 1889.

Name.	Tonnage.	Port.	No. of Visits.	Remarks.
Bertie Pierce	90	Gloucester	1	Bound to Newfoundland to purchase herring.
Commonwealth	81	do	1	do do
Chas. L. Woodbury	100	do	1	do do
Edith Rowe	80	do	1	do do
Harry G. French	95	do	2	do do
Henry Wilson	88	do	1	do do
M. L. Wetherell	65	do	2	Magdalens, to buy herring to sell in St. Pierre
Senator Morgan	86	do	1	Bound to Newfoundland to purchase frozen herring.

FISHING VESSELS of United States holding Licenses under *Modus Vivendi* issued in Canada, which visited Canso, N. S., during the Year 1889.

Name.	Tonnage.	Port.	No. of Visits.	Remarks.
A. T. Gifford	81	Gloucester	3	Seeking bait; fishing off Canso.
Annie C. Hall	84	do	2	do
Amy Hausen	103	do	1	do
Annie Wesley	88	Boston	1	Bait and stores.
Abbie F. Morris	77	Gloucester	1	Seeking bait.
Ben Hur	100	do	2	do
Bessie M. Wells	92	do	1	do fishing off Canso.
Cecil H. Low	78	do	2	Bait and supplies.
Carleton Belle	132	Booth Bay	1	Bait.
Centennial	110	Gloucester	1	do
Charles H. Griffin	117	do	1	do
Chester R. Lawrence	86	do	1	do
Charles H. Boynton	71	do	2	do
D. A. Story	86	do	2	do
D. A. Wilson	86	Beverley, Mass.	2	do
Edgar S. Foster	94	do	1	do
Emma E. Wetherell	109	Boston	2	do
Frank A. Smith	73	Gloucester	3	Bait, ice and supplies.
Gatherer	90	do	4	do
Geo. F. Keene	66	Portland	4	do
Herman Babson	95	Gloucester	1	do
Hereward	85	do	2	do
H. A. Duncan	83	do	2	do
Henry L. Phillips	76	do	6	do
John Lomis	62	Portland	1	Bait.
J. W. Campbell	79	Gloucester	1	Mackerel seining.
Lizzie Griffin	100	do	5	Bait, ice and supplies.

Fishing Vessels of United States holding Licenses in Canada, etc.—*Con.*

Name.	Tonnage.	Port.	Number of Visits	Remarks.
Laura Sayward	64	do	4	Bait.
Lucy M. Dyer	78	Portland	3	do
Lizzie Greenleaf	88	Gloucester	1	do
Mystery	114	do	2	Bait, ice and supplies.
Mabel W. Woodford	104	do	4	Bait.
Mary G. Wells	86	do	1	do
Martha A. Bradley	76	do	1	do
Nellie M. Davies	89	do	1	do
Nettie G. Thurston	81	do	1	do
Ossipee	68	do	2	do
Plymouth Rock	92	do	2	do
Pendragon	68	do	1	Bait, and to ship men.
Ralph E. Eaton	65	do	1	Bait.
Reporter	79	do	1	do
Sarah B. Putnam	76	Beverley, Mass.	5	do
Starry Flag	56	Gloucester	2	do
Samuel V. Colby	95	do	1	In for shelter.
Thetis	91	do	3	Bait.
Velocipede	64	do	4	do
W. H. Oakes	68	do	1	Mackerel seining.

List of United States Fishing Vessels holding Licenses issued in Newfoundland, which visited Canso, N.S., during the Year 1889.

Alert	87	Gloucester	2	Bait and ice.
Agnes E. Downs	80	Portsmouth	1	Bait.
Admiral	73	Gloucester	2	do
Annie M. Jordan	80	do	1	do
Carrie and Annie	90	Boston	2	do
D. M. Story	71	Gloucester	1	In for shelter ; fishing on Grand Bank.
Ellen M. Adams	85	do	2	Bait.
Epes Tarr	86	do	2	do and mackereling in the fall.
Ella G. King	71	do	1	do
Edith S. Whalen	78	do	1	do
Ethel	68	do	1	do
G. P. Whitman	89	do	1	Mackereling.
Gertie E. Foster	85	do	1	Bait.
Henrietta	74	do	1	do
Horace B. Parker	93	do	1	Water and stores.
Henry Morganthen	85	Portland	1	Bait.
Howard Holbrook	92	Gloucester	4	do and supplies.
H. B. Griffin	117	do	1	do
John M. Bray	79	do	1	do
J. G. Whittier	99	do	2	do
Marguerite	103	do	1	do
Mascot	77	do	2	do
Margaret Mathers	91	do	2	do
Mist	68	do	3	do
Maggie and Lily	77	do	2	do
M. B. Stitson	114	do	1	Coal and supplies.
Maud M. Story	71	do	1	Bait.
Porter S. Roberts	72	do	3	do
Reuben L. Richardson	92	do	2	do
Rigel	107	do	1	Water.
Stranger	82	do	3	Bait.
Samuel R. Crane	74	do	2	do
Thos. F. Bayard	95	do	1	do
Wachuset	75	do	1	do
W. E. McDonald	93	do	1	do

LIST of United States Fishing Vessels taking Cod or Halibut, without holding Licenses under *modus vivendi*, which visited the Port of Canso, N.S., during the Year 1889.

Name.	Tonnage.	Port.	No. of Visits.	Remarks.
Alice M. Stroples	89	Gloucester	2	In for water; fishing off Canso.
Admiral	75	do	1	do do
Alaska	49	Southport	1	do do
Agnes	111	Gloucester	1	Water; hand-lining on Grand Bank.
A. D. Storey	98	do	1	Shelter; bound to Iceland for halibut.
Chester R. Lawrence	86	do	1	do off Canso, fishing.
Carl W. Baxter	70	do	1	Water; fishing on Quero Bank.
Cecil H. Lowe	75	do	1	Repairs.
Carleton Belle	80	Booth Bay	1	Water; hand-lining on Grand Bank.
David Sherman	67	Gloucester	1	Water.
Edgar S. Foster	94	Beverly, Mass	1	do
Edward Grover	73	Gloucester	1	Shelter.
Geo. F. Keene	66	Portland	1	Water; fishing off Canso.
Henry S. Woodruff	209	LeMoine	1	do and repairs.
Joseph B. Maguire	88	Gloucester	1	Water.
J. J. Clark	66	do	1	do
John Brown	63	Portland	1	Shelter.
Josie M. Calderwood	86	Gloucester	2	Water.
Knight Templar	69	do	1	do fishing off Canso.
Leila Linwood	62	do	3	do do
Magnolia	108	do	1	do do
Mattie Winship	73	do	1	do do
Mathew Kearney	66	do	2	do do
M. H. Perkins	77	do	1	Shelter and water; fishing on Grand Bank.
Marion Grimes	58	do	1	Shelter.
Nettie G. Thurston	82	do	2	Water.
Nellie Burns	64	Portland	1	Seeking medical assistance.
Richard Lester	69	Gloucester	2	Water; fishing off Canso.
Sigfrid	72	do	3	do do
W. H. Jordan	86	do	1	do

LIST of United States Mackerel Seiners, not holding Licenses under the *modus vivendi* which visited the Port of Canso, N.S., during the Year 1889.

Name.	Tonnage.	Port.	No. of Visits.	Remarks.
Ambrose Knight	91	Gloucester	2	
Augusta E. Herrick	94	Boston	1	
A. R. Crittenden	81	Gloucester	3	
Belle A. Nauss	88	do	1	
Commonwealth	81	do	1	
David F. Low	57	do	2	
Davy Crockett	80	do	1	
Edith Rowe	80	do	2	
Ernest F. Norwood	71	do	1	
Ellen Lincoln	92	Portland	1	
Enola C	62	Gloucester	1	
Frank A. Rackliffe	99	do	1	
Flora Dilloway	77	do	1	
Flash	69	do	1	
Geo. F. Edmunds	141	do	2	
Georgie Willard	52	Portland	1	
Governor Butler	87	Gloucester	2	
Gertie Evelyn	81	do	1	
Henry Wilson	88	do	2	
Herald of the Morning	68	do	1	
Isaac A. Chapman	80	do	1	
John M. Plummer	96	Portland	2	
Jeanie Seaverns	106	Gloucester	1	
Kate Florence	96	do	1	
Lizzie M. Hannum	71	do	3	
Lizzie M. Center	77	do	2	
Margie Smith	58	do	1	
Moro Castle	89	do	1	
Northern Eagle	35	do	1	
Procyon	107	do	2	
Rattler	94	do	2	
Rushlight	66	do	1	
Rapid Transit	80	do	2	
Senator Morgan	86	do	1	
Wm. M. Gaffney	70	do	1	
Wm. H. Foye	66	do	1	
Wm. H. Wellington	81	do	1	

SUMMARY.

Fishing Vessels under trading register	8 vessels	paid 10	visits.
Mackerel seiners, unlicensed	37	do 52	do
Cod and halibut, unlicensed	30	do 39	do
do licensed, Newfoundland	35	do 55	do
do do Dominion	47	do 96	do
Total	157	252	

NOTE.—The summary of the table shows, in regard to the cod and halibut bankers, that 82 vessels holding licenses paid 151 visits to this port, as against 30 unlicensed which paid 39 visits.

In regard to the mackerel seiners, the failure of the fishery accounts for the small number of licenses taken out.

1076
276